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JOURNAL OF THE STATISTICAL SOCIETY,

MARCH, 1885.

Population Statistics *of* China.

By Sir Richard Temple, Bart., G.C.S.I., D.C.L., LL.D., &c.

[Read before the Statistical Society, 17th February, 1885. The President, Sir Rawson W. Rawson, K.C.M.G., C.B., in the Chair.]

The population of China has, from its vastness, long been among the marvels of the civilised world. Its numbers have been believed to exceed those of any other people, ancient or modern. But as scientific inquiry in recent times began to penetrate into Chinese regions, doubts arose as to the numbering of the people. The Government had from age to age been nominally ascertaining the number of its subjects, and setting forth the results of the supposed enumeration. But these results, instead of showing a steady decline or a steady increase, or such moderate fluctuations as could reasonably be understood, showed violent and almost incredible variations. Though some of these variations could be explained away by changes of territorial dominion, yet enough of them remained to excite scepticism regarding the reality of the enumeration. The official numbers have within the last century and a-half ranged from 436 to 363 millions,* the general idea probably being to the effect that the population is about 400 millions. But apart from scepticism arising from general grounds, we have of late been repeatedly warned by British authorities specially acquainted with China, that the so-called census in China cannot be depended upon, and that it is often only nominal. It must be added, however, that the number last published in China by official authority, about 350 millions, is much more moderate and apparently far more credible than the foregoing estimates.

Inasmuch as the number of the Chinese people is one of the most interesting, as well as one of the very largest, items in the population statistics of the world, it is well to see whether there are any means of testing it, and of forming some foundation of

* The population return of 1842 of 436 millions was an estimate, not a census. The highest *official census* was that of Kiaking, in the year 1812, and was 362,447,183.

probability on which an estimate can be built up. Now, fortunately, such means are supplied by the census made under the British Government in India. It is remarkable that the area of the two countries, India and China proper (exclusive of the Central Plateau), are about the same, that is, about $1\frac{1}{2}$ millions of square miles; in both countries there are long basins watered by great rivers, fertile deltas, broad plains, and numerous mountain chains, amidst the offshoots of which there are branching valleys, and, on the whole, many tracts that are thickly, together with many tracts that are thinly, inhabited. In both countries the population is most unequally distributed. Respecting India, the popular mind, considering the existence of teeming millions, which is a fact, imagines that the country is for the most part thickly populated, which is not the fact. The truth is that the country is for the most part thinly populated, but in some districts, even in some provinces, the population is dense, so dense indeed as to make up a tolerably high average for the whole area. The position of China proper is precisely similar. Both countries are under similar conditions, physical, ethnical, climatic, geographical. In both there is a strong tendency to multiplication of the race. In both the population loves to congregate in favoured districts, to settle down and multiply there till the land can scarcely sustain the growing multitudes, and to leave the less favoured districts with a scanty though hardy population.

As, then, we possess full data regarding the Indian people, collected at various times during the last generation, and further revised by a general census taken in 1881, we may fairly reckon what, according to Indian averages, the Chinese population is likely to be. From that which is known regarding the Indian population, we may proceed tentatively towards that which is not accurately known, or is almost unknown, regarding the Chinese population. That is a legitimate method of deduction in aid of a reasonable estimate of population statistics in China proper. This then is what I propose to attempt in the present paper.

The Chinese empire contains nearly $4\frac{1}{2}$ millions of square miles; consists of two main divisions, first, the Central Plateau, containing two-thirds of the whole area, and secondly, China proper, containing one-third.

The former, or the Central Plateau, is a wondrous region, comprising long chains of mountains, vast snow-fields, extensive lakes, wide-spreading deserts, together with some tracts of cultivation near rivers, and some broad uplands occupied by pastoral tribes. Its area is enormous, nearly 3 millions of square miles. There are no means of ascertaining exactly the population of such a region, and no known averages of India or of any other country are

applicable thereto. But we do know that the population is very scanty and, relatively to the area, is small in the extreme.

The latter, or China proper, has about $1\frac{1}{2}$ millions of square miles. This area, though far from being uniformly rich, has many fertile and densely peopled tracts, and sustains a population which, though unequally distributed, and far from being homogeneous, is one of the largest, if not absolutely the largest, under any one dominion in the world. It is to test the probable numbers of this great population that I propose to apply the averages deduced from the census of India.

In the first place, the average of the population in India is that of 184 souls to the square mile, the area being 1,377,450 square miles, and the population 253,941,309 of souls. If this average were applied to the area of China proper, or 1,533,650 square miles (exclusive of the Central Plateau), then the population would be estimated at 282,191,600 of souls.

But let us apply the Indian averages to the Chinese provinces in detail. There are eighteen of such provinces. Of these provinces, two, namely, Pechili and Shantung, are partly deltaic or alluvial, and one, Kiangsu, almost entirely so.

Three, namely, Chekiang, Fukien, and Kwantung, are littoral, lying along the shore of the Pacific Ocean.

Three, namely, Ganhwey, Hupi, and Honan, are rich inland provinces.

Four, namely, Hunan, Kiangsi, Kwangsi, and Kweichow, are inland provinces of lesser though considerable richness.

Four, namely, Shansi, Shensi, Kansu, and Yunnan, are hilly frontier provinces.

And lastly, one, namely, Szechuen, is partly rich and partly mountainous.

Let us consider these several groups of provinces separately.

The Pechili province is deltaic and alluvial in those portions of it which are near the mouth of the Peiho river and its affluents. Many of these streams run through the low country and converge at Tien-Tsien, whence the united river flows into the Pechili Gulf.

This region has been regarded as the most densely peopled part of China.* It is liable to wide-spreading inundations when the rising waters of the many streams fail to find a sufficient vent by the channel of the Peiho between Tien-Tsien and the gulf; indeed, the damage from these floods has been so great as to cause emigration, and thus to thin the population.

Its southern or lower division, about one-third of the whole, is generally lowland and rich. This division contains the two great

* But it may be equalled in density perhaps by the districts of Hankow and neighbourhood, at the junction of the Han river with the Yang-tse-Kiang.

towns of Pekin and Tien-Tsien. But the upper, or northern division (about two-thirds of the whole) is highland or mountainous. At a short distance north of Pekin there is the mountain range along the ridge of which runs the great "wall of China."

Now the lower division may be compared with the Indian province of Bengal, which is deltaic and alluvial, with a dense population of 505 to the square mile. The upper division may be compared to the Chutia Naghore province, a hilly tract adjacent to the Gangetic delta of Bengal, and has a population of 130 to the square mile. Thus we have in the province of Pechili—

The lower division, or 25,000 square miles, at 505 average, 12,625,000 souls.

The upper division, or 42,270 square miles, at 130 average, 5,495,100 souls.

Total, 67,270 square miles and 18,120,100 souls.

Next, the province of Shantung mainly consists of a mountainous projection jutting out into the ocean and dividing the deltas of the Hoang-ho and Yang-tse-Kiang. It is a classic land to the Chinese, being much frequented by pilgrims, but does not contain any great town. It comprises the lower course of the Hoang-ho; it is traversed by the great canal constructed to join artificially the natural water highways of the Hoang-ho and the Yang-tse-Kiang. To it then may be applied the Indian average of Bengal and Chutia Naghore together, namely, 408 to the square mile. This would give for Shantung, then, 53,760 square miles, at 408 to the square mile, 21,934,080 souls.

Then comes the province of Kiang-su, entirely deltaic and alluvial, which, if not on the whole the richest, is yet the most uniformly low-lying, fertile, cultivated, and prosperous province of China. It is traversed almost from end to end by the great canal. It contains the lower course and the mouth of the Yang-tse-Kiang. It has the great town of Shanghai. To it the Indian average of deltaic Bengal is fairly applicable.

Thus we have for Kiang-su 40,130 square miles, at 505 to the square mile, 20,265,650 souls.

Then we have the two littoral provinces extending down the coast of the Pacific, namely, Chekiang and Fukien (including the island of Formosa). They are partly mountainous or hilly, but have some plains and rich valleys; they contain tea-producing districts; they have the great towns of Hangchow, Ningpo, and Foochow.

With these may be compared the Indian territories of the Madras presidency, which also lie on or near the coast, with very rich tracts and some mountain ranges inland. The average density in the Madras presidency is 230 to the square mile; if this be

applied to these two Chinese provinces, we have for Chekiang, 35,660 square miles, at an average of 230 to the square mile, 8,201,800 souls; and Fukien, 53,480 square miles, at the same average, 12,300,400 souls.

Continuing our view down the Pacific coast, we see the province of Kwantung. That province is traversed by the Sei-Kiang river, and contains the estuary and the town of Canton, also the town of Macao. It is in part hilly, but has rich plains and valleys. It may be compared with the Gujerat province on the western coast of India, north of Bombay, which province has a population of 260 to the square mile; thus we have for the province of Kwantung, 104,190 square miles, at 260 to the square mile, 27,089,400 souls.

Leaving the Pacific coast, we take the inland provinces of China. Of these the foremost are, first Honan, containing the middle valley of the Hoang-ho; then Hupi and Ganhwey, containing the middle valley of the Yang-tse-Kiang, and touching the shores of the two great inland lakes. These provinces contain the large towns of Hankow and Suchao; they produce all the best and characteristic products of China, and are to be classed among the fertile agricultural districts of the world; they do not, however, form an unbroken champaign, being for the most part hilly, though intersected with rich plains and valleys. They are of course densely peopled. The best parts of them (say one-third of the whole) may be compared with the middle Gangetic basin of India, including Oudh and Behar, which is on the whole the finest part of India; then one-third being somewhat less good, may be compared with the North-western Provinces of India (exclusive of Oudh), or the upper Gangetic basin; lastly, the remaining one-third (being still less good) with the Punjab or the upper Indus basin. Now the average per square mile in Oudh and Behar is 511; in the North-western Provinces (exclusive of Oudh) 373, in the Punjab 176.

Thus we have for the three Chinese provinces the following estimate:—

	Square Miles.	Souls.
Honan	67,000	23,672,980
Hupi	70,450	24,891,607
Ganhwey	48,460	17,122,180

The next group of inland provinces consists of Hunan and Kiangsi; these comprise the shores of the two vast inland lakes Tungting and Poyang; they have several tea producing districts,

but they are intersected by hill ranges, with numerous spurs in all directions; they may be fitly compared with the Indian Punjab, which has several rugged or poorly cultivated tracts, but has also several rich and populous districts; it has just been seen that the Punjab average is 176 to the square mile.

The provinces then of Hunan and Kiangsi would, according to this, have the following population :—

	Square Miles.	Souls.
Hunan.....	83,000 at 176 to the sq. m.	14,608,000
Kiangsi	68,570 ,,	12,068,320

The adjoining group of inland provinces consists of Kwangsi and Kweichow. Their topography resembles that of the last two provinces, but they are inferior in natural capabilities, and have suffered from various special causes. To Kwangsi, which contains the upper valley of the Sei-Kiang, may be applied the Indian average of the Central Provinces, or 116; this would assign to Kwangsi a population of 9,077,000 souls for an area of 78,250 square miles. To Kweichow, which is inferior and very hilly, may be applied the Indian average of the Native States of the Bombay presidency, or 94; this would give to Kweichow a population of 6,067,700 souls for an area of 64,550 square miles.

We have heretofore been proceeding from east to west. Following this course we reach the three mountainous provinces on the western border of China proper and adjoining the great Plateau. These are Yunnan, Shansi, and Shensi; the first, Yunnan, comprises the upper basin of the Yang-tse-Kiang, and is generally mountainous; though possessing boundless capabilities, it has suffered much from special causes.

The next two, Shansi and Shensi, include nearly all the upper basin of the Hoang-ho, and they too are mountainous, being bounded on the north by the Great Wall. But they, though in many parts little cultivated or inhabited, have some strips or patches of fairly peopled country. To Shansi and Shensi may be fairly applied the Indian averages of the Central Provinces of India or of the Hyderabad Deccan, or of the Central India Agency; these are respectively 116, 120, and 123 to the square mile. All these Indian divisions have strips of fertile riverain land scattered among districts but little cultivated. Then to one half of Yunnan may be applied the above named average of 116, and to the other half the average of British Burma, namely 42.

Thus we obtain the following estimate :—

	Square Miles.	Souls.	
Shansi	65,950 at 123	8,111,855	
Shensi	81,190 „ 123	9,986,370	
Yunnan { half	61,120 „ 116	7,100,360	9,671,180
Yunnan { „	61,120 „ 42	2,570,820	

Next, adjoining Shensi, is the wild and extensive province of Kansu, which, though reckoned a part of China proper, belongs physically to the Central Plateau, and is in many parts a fearful desert. At least one-third of it must be uninhabited and may be left blank. To the remaining two-thirds may be applied the Indian averages of the Rajputana States, or 78 to the square mile, and of Sind, or 50 to the square mile; as both these large territories, though partly cultivated, are in many parts very thinly inhabited. Thus the area of Kansu, or 262,520 square miles, would have an estimated population of 11,200,768 souls, one-third being taken as desert absolutely, one-third at an average of 78 to the square mile, and one-third at an average of 50.

Lastly, there is Szechuen, next after Kansu the largest of the Chinese provinces, containing 166,800 square miles. It comprises a large part of the upper basin of the Yang-tse-Kiang and the basins of four considerable affluents. It is almost encircled with mountains, and on one side, the west, these mountains are snow-clad, forming part of the great Yungling system. But it has several large vales and one magnificent valley, all of which are fairly inhabited.

The character of this extensive province varies so much that a single average applied to the whole would lose some of its significance. It would seem fair to take for one-fourth the Indian average of Mysore, generally mountainous, or 169 to the square mile, for one-fourth the average of the Bombay Deccan uplands, or 145 to the square mile, for one-fourth the average, or 249 of the Central Punjab (including the divisions of Lahore, Amritsar, and Rawul Pindee), and for one-fourth the average of the Punjab Native States in the Himalayas, 107, or of Assam, in the midst of mountains, 103.

This would give—

	Souls.
¼ of Szechuen or 41,700 square miles at 169	7,047,300
¼ „ 145	6,046,500
¼ „ 249	10,383,300
¼ „ 103	4,295,100
	27,772,200

I must now summarise the estimates of population thus obtained as follows :—

Province.	Area.	Population. Souls.	Average per Square Mile.
Pechili	67,270	18,120,100	269
Shantung	53,760	21,934,080	408
Kiangsu	40,130	20,265,650	505
Chekiang	35,660	8,201,800	230
Fukien	53,480	12,300,400	230
Kwantung	104,190	27,089,400	260
Honan	67,000	23,672,980	353
Hupi	70,450	24,891,980	353
Ganhwey	48,460	17,122,180	353
Hunan	83,000	14,608,000	176
Kiangsi	68,570	12,068,320	176
Kwangsi	78,250	9,077,000	116
Kweichow	64,550	6,067,700	94
Yunnan	122,420	9,671,180	79
Shansi	65,950	8,111,815	123
Shensi	81,190	9,986,370	123
Kansu	262,520	11,200,768	42
Szechuen	166,800	27,772,200	166
Total	1,533,650	282,161,923	183

In round numbers, then, by an estimate formed upon known averages of India, the population of China proper would apparently amount to 282 millions, with a general incidence of 183 to the square mile, on an area of $1\frac{1}{2}$ million of square miles. This estimate will bear comparison with the latest official returns obtained from China, according to the following table :—

Province.	Population according to Estimate from Indian Averages.	Average per Square Mile.	Population according to Official Returns.	Average per Square Mile.
Pechili	18,120,100	269	28,000,000	416
Shantung	21,934,080	408	29,000,000	540
Kiangsu	20,265,650	505	37,800,000	941
Chekiang	8,201,800	230	8,100,000	227
Fukien	12,300,400	230	14,800,000	276
Kwantung	27,089,400	260	19,200,000	184
Honan	23,672,980	353	23,000,000	343
Hupi	24,891,980	353	27,400,000	389
Ganhwey	17,122,180	353	34,200,000	705
Hunan	14,608,000	176	18,700,000	225
Kiangsi	12,068,320	176	23,000,000	335
Kwangsi	9,077,000	116	7,300,000	93
Kweichow	6,067,700	94	5,300,000	82
Yunnan	9,671,180	79	5,600,009	45
Shansi	8,111,815	123	14,000,000	212
Shensi	9,986,370	123	10,200,000	125
Kansu	11,200,768	42	9,285,377	35
Szechuen	27,772,200	166	35,000,000	210
Total	282,161,923	183	349,885,386	227

The general conclusion may be that the latest Chinese returns, though probably in excess of the reality, do not seem to be extravagant or incredible on the whole if tested by the known averages of the Indian census. In three provinces only, Shantung, Kiangsu, and Ganhwey, do the Chinese returns seem excessive. In some provinces, on the other hand, the returns appear to be too low. The comparison between India and China proper is complete, as I have applied almost all the various averages of the Indian census.

There remains the question as to what may be the population of the Central Plateau mentioned in the beginning of this paper. So much of that vast region is sterile, or desert, or impossible for human habitation, and the existing population congregated here and there in this enormous space is so scattered, that the known averages of India are not applicable. It is certain however that the population is relatively very inconsiderable. The outcome of the best estimates that can be formed by explorers and geographers is to the effect that the population may for the whole plateau amount to 15 millions.

If these 15 millions for the Central Plateau be added to the 282 millions shown above for China proper, then the grand total for the Chinese empire would be 297 millions of souls.

The examination of Chinese population statistics will become interesting in many respects, but more particularly in regard to the prevalent opinion that China is much the most populous empire in the world, and that the followers of Buddhism greatly outnumber those of any other religion. If the estimate presented in this paper be at all near the truth, then the population of the Chinese empire hardly exceeds that of the British empire; and the Buddhists according to that view would not exceed in number the Christians so considerably as is commonly supposed.

Discussion *on* Sir Richard Temple's Paper.

The President said that before the discussion began he wished to read a note which Sir Rutherford Alcock published in the "Contemporary Review" in December, 1880, in an article upon "China and its Foreign Relations." He regretted that Sir Rutherford's state of health prevented his being present at the meeting and taking part in the discussion, but the extract would show what were his views with regard to the credibility of the returns issued by Chinese authorities.

"I have seen lately criticisms on the commonly assumed population of the Chinese Empire. The Chinese are not without census returns, and as to their trustworthiness, we may feel certain that, as there is always a question of poll tax and military conscription in eastern countries, any error will not be on the side of exaggeration of actual numbers. No complete census of the empire appears to have been published since 1812—sixty-four years ago. But there are no less than twenty-one censuses on record since the year 1393 (the twenty-sixth of the reign of Hang-whan), besides several aggregate calculations by Chinese authors. Not to go further back than the censuses taken by the first emperor of the present dynasty in the eighteenth century, which were violently resisted by the Chinese, their object being to levy a poll tax upon all men between the ages of 16 and 60, and to get at the actual number of those fit for the army, we may safely assume that no excess over actual numbers would be returned. This was in 1711, and the next was taken at the time of Kienlung in 1753, and fairly corresponds with that of the previous period, as Dr. Wells Williams, the author of the 'Middle Kingdom,' assures us, who examined the whole subject very closely. Then followed a census taken in 1792, the year before Lord Macartney's embassy, the result of which was given by the Commissioner Chau as 333 millions. Possibly he may have had motives of national pride or vanity for exaggerating. But Dr. Morrison gives the numbers of the census (the nineteenth), as recorded in Chinese works, at 307,467,200; while the census of 1812 is considered by both Drs. Morrison and Bridgeman, both competent sinologues, as 'the most accurate that has yet been given of the population.' And this places the number at 362,476,188. These data, if they cannot be relied upon in the same way as those taken in Europe in the present day, are at all events worth more than the 'guesses of foreigners who have never been in the country, or travelled in it only very partially.' Finally there are three other tests in support of the authenticity and trustworthiness of such returns.

"1. The highest population ascribed to China is not greater than the country can support, or than other countries can show. Thus the area of the eighteen provinces is 1,348,870 square miles, and the average population therefore to the whole in 1812 would be 268 to every square mile. According to M'Culloch, who also called

in question the accuracy of the Chinese census, in the United Kingdom in 1831 there were 212 to the square mile; in Ireland, 249; in France in 1846, 223; in Lombardy in 1839, 260; in Belgium in 1836, 321; and in Lucca in 1839, 400.

"2. So as to the means of support. A report made to Kienlung in 1745 gives the area under cultivation at 595,598,221 acres, and a subsequent calculation places it at 640,570,221. This is about the same proportion as in England, or about 2 acres for the support of each individual; while in Ireland it is two persons to each acre, in France $1\frac{2}{3}$, in Holland $1\frac{3}{4}$ of an acre of cultivated land to each person.

"3. So again as to the rate of increase. Whether the starting point be the census taken about A.D. 1000, when the population was set down at 9,955,729, or that of 1711, there is nothing to throw doubt on the latest returns. From 1711 to 1753 the population increased 74,222,092, being a little more than 6 per cent. per annum for forty-two years, during which the southern provinces were brought into more complete subjugation; while from 1753 to 1792 the increase was only about $2\frac{1}{2}$ per cent. per annum for thirty-nine years, and from 1792 to 1812 the increase was 54,126,679, or an annual advance of not quite 1 per cent. for twenty years. At the same rate the population at present would be over 450 millions; but no one has assumed this to be the number. From such an estimate, according to rate of increase, would have to be deducted the overflow of Chinese in all directions—to the Indian Archipelago, Australia, California, &c., a couple of millions; for the waste of destructive civil wars, and two or more great famines, say 10 millions more; and we shall still have over 400 millions. If we compare the above rates of increase with those of countries in Europe, where the inhabitants are less prolific than in China, they will be found to be fully borne out. The 'Times' criticism, therefore, on the '400 millions of people,' and the 'third of the human race,' described as 'delicious rhetorical flourishes,' may be held sufficiently answered by reference to facts and figures, which are much less like 'rhetorical flourishes' than its own oracular comments."

Before the discussion began he would point out what were the differences in percentages between Sir Richard Temple's estimate founded upon the Indian census and the returns given by the Chinese Government. The province of Pechili contained the capital, Pekin, and the town of Tien Tsien; Sir Richard Temple's estimate for that province fell short of the Chinese returns by 54 per cent.; for Shantung, which was next to Pechili, it fell short by 32 per cent.; for Kiangsu it fell short by 86 per cent.; for Chekiang the numbers were about equal; for Fukien, Sir Richard's estimate fell short by 20 per cent.; for Kwantung, in which Canton was situated, the estimate exceeded the returns by 41 per cent. He might here remark that the emigration from China had been chiefly from the provinces of Fukien and Kwantung. Sir Rutherford Alcock estimated the decrease there caused by emigration as 2 millions, and Sir John Bowring in 1857 spoke of it as from 2 to 3 millions. In Honan Sir Richard Temple's estimate was

3 per cent. more than the Chinese return; in Hupi 10 per cent. less; in Ganhwey there was a difference of exactly one-half; in Hunan the returns were 27 per cent. higher than the estimates; in Kiangsi 90 per cent. higher; in Kwangsi the returns were 19 per cent. less; in Kweichow 19 per cent. less; in Yunnan 42 per cent. less; in Shansi 71 per cent. more; in Shensi 16 per cent. more; in Kansu 26 per cent. less; in Szechuen 26 per cent. more; showing that Sir Richard's estimates founded on the Indian population were sometimes greater and sometimes less than the returns. The average difference of the whole is 24 less. The paper afforded a guide which might lead them to a correct conclusion, and he hoped that somebody who took an interest in the question would consider the subject, for during the two days since he had received Sir Richard Temple's paper, he had found that it was one of very great interest, and one which might be very usefully examined by anyone who had the time and the leisure to devote to it.

Professor Douglas (British Museum) said he did not place so much faith in the Chinese census as Sir Rutherford Alcock was inclined to do. He regarded the censuses taken by the Chinese Government as untrustworthy, and he agreed with Sir Richard Temple in thinking that the only plan for getting at anything like an approximate idea of the population of China was by the comparative method. Sir Rutherford Alcock had mentioned two censuses taken in the years 1711 and 1753. The first was taken for the purpose of levying a poll tax and establishing a system of conscription, and on that occasion the returning officers gave the whole population of China as being about 28 millions. In 1753 another census was taken to form the basis of a system of relief to be granted in cases of emergency, and the returns then swelled to a total of 103 millions, the difference between the two censuses being something like 75 millions. He merely mentioned that as an instance of the untrustworthiness of Chinese censuses. Orientals as a rule took no interest in statistics, they never really troubled themselves about them, and they did not the least understand their value. Such a Society as the Statistical Society would have no *locus standi* whatever among them. If a conscientious official in China desired to make an authentic return on any statistical subject, he would have the greatest difficulties thrown in his way. Not long since, Mr. Baker told a story at the Geographical Society of a certain Chinese prefect who was ordered to make a return of the population of his prefecture. Being a conscientious man he carefully appointed deputies for the work, and among them sent two to take the census of a certain city, at the same time adopting means to prevent their holding any communication one with another, in order to insure a truthful return. On the completion of the work the two officers presented returns that were so completely divergent, that the prefect concluded they had been based simply on guess work, and handed the two deputies over to the governor of the province for punishment. Again he sent two others who more cunning than their predecessors, succeeded in communicating with one another, and agreed to return identical

numbers, viz., 20,401. This identity suggested as grave doubts in the mind of the prefect as the divergence of the earlier return had done, and he therefore took one of the deputies aside and said, "you say the population in the city is 20,401, now which was the one, a man or a woman?" The officer was so startled at the unexpected question that he acknowledged the fraud, and he with his fellow offender was also forwarded for punishment. But the prefect being determined not to be beaten decided to go himself. Meanwhile the people of the city had become so alarmed at the repeated arrival of deputies, and the intended arrival of the prefect, that on the news of his approach they left the city in a body and hid themselves in the fields. The prefect on entering the city found it therefore empty, and in despair at the result of his pertinacity he hung himself at the city gate, clenching in his hand the following return: "Wuming hiem. Men none; women none; children under 14 none; total none." But though a comparative method such as Sir Richard Temple had adopted might lead to an approximate estimate of the population, it could after all be only the merest approximation, since in a country such as China, large districts were repeatedly subject to depopulation from famine, flood, war, and pestilence. About eight or ten years ago in the provinces of Shansi and Shensi there was a famine which was said at the time, and he believed with some accuracy, to have swept off 9 million souls. That was an instance of the kind of processes that were constantly going on in different parts of the huge empire of China. In speaking of Shansi and Shensi Sir Richard Temple seemed to treat them rather too much as though they were mountainous provinces and nothing more, but as a matter of fact they were agriculturally very rich provinces. They were covered, as were also a great part of the province of Kansu and the northern part of Honan, with a deposit of loess, extending to a depth of from 50 to 200 feet. Loess was a light friable soil of a yellowish colour, and it was from the colour imparted to the waters of the Yellow river by the loess through which it ran, that it derived its name. It was so porous that water percolated through it with the greatest ease. The consequence was that throughout the whole district the water was considerably below the level of the surrounding country. One of the peculiarities of loess was that its cleavage was invariably vertical, the result being that the banks of the rivers which traversed it rose perpendicularly on either side, making travelling dangerous and road making difficult. On the other hand, these served the useful purpose of affording cave dwellings for the people, and were bored like rabbit warrens. The surface of the loess was fertile to a degree, the farmer had but to scratch the soil and throw in his seed, and in good seasons when rain was frequent and temperate he was rewarded with abundant crops. In dry seasons however, when there was no rain to moisten the ground and fertilise the seed, the light surfaced soil was easily blown away, and the grain exposed to sun and cold, failed to germinate. This was the cause of the many dreadful famines that had taken place in the loess country. Sir Richard Temple had estimated the population per square mile of Pechili above that of Kwantung. He (Professor

Douglas) had been in both provinces, and he thought there could be no doubt whatever that the population of Kwantung was much denser than that of Pechili. The deltas of the rivers in Kwantung were exceedingly rich, and the population was large in proportion. On the other hand the delta of the Peiho was very poor, and largely impregnated with salt, so much so that for miles from the sea nothing, not even grass, would grow; it was merely a mud flat. Further inland wheat, millet, &c., were grown, but the delta was certainly not a rich one. To the province of Kweichow Sir Richard Temple gave a larger estimate than the Chinese, but he (Professor Douglas) thought the Chinese were right. Kweichow was an exceptional province; the climate was very unhealthy; the water was very bad, and the Chinese avoided it as much as possible. It was very mountainous, and was mainly inhabited by Miao-toze tribes. The Chinese population was very small, and would remain so as long as the conditions continued as they were. He thought Sir Richard Temple had made a mistake with regard to the area of Szechuen. In estimating the areas of some if not all the other provinces he had given them in statute square miles, whereas in the case of this province he had reckoned by geographical square miles. He (Professor Douglas) believed that the area of the province was 220,000 statute square miles instead of 168,800, and then the larger population estimate of the Chinese would be justified by Sir Richard Temple's calculations. He thought Sir Richard Temple was nearly right about the population of Yunnan. It was one of those unfortunate portions of the empire that had been more than decimated by rebellions and wars. Only a few years ago the Panthay rebels destroyed and depopulated whole districts of the province; but such was the recuperative power of the inhabitants, that already it was recovering from their ravages. Both agriculturally and as a metalliferous region it was extremely rich, and was capable of sustaining a very much larger population than it now possessed. But unfortunately it had little or no outlet for its produce. Englishmen had tried to reach it from Burmah, and the French had tried to do so from Tonquin; but both attempts had failed. Within the last few days however Mr. Colquhoun the traveller had pointed out that the true trade route to that and to the other south-western provinces of China was by way of the Shan States to the north of Siam, and had shown that there were neither political nor physical difficulties to prevent a railway being laid through the plains of Siam and the Shan States to the frontiers of China. This was an old road, and was well known as the golden road, from the fact that the wealthy Chinese traders passed along it into Siam. The towns through which it passed were rich and populous, and it was essentially a route which in the interests of the commerce of the world should be opened to all comers. If England did not lead the way in this enterprise, France would, and the result would be that in Tonquin and Cambodia French goods would be admitted on conditions which would make competition with them impossible. He was quite certain that the opening of the route to foreign commerce would give such an impetus to the trade of Yunnan, that the

population of that province would very speedily be doubled, trebled, and quadrupled.

The PRESIDENT said Sir Richard Temple had given the area of Kansu as 262,000 square miles, but in Sir John Bowring's statement, and in the map of China, it was only 78,000 square miles. It had generally been considered that Szechuen was the largest province of China, but the paper made Kansu 100,000 square miles larger.

Professor DOUGLAS said the boundaries of Kansu were very indefinite, extending far into Central Asia, and it was really impossible to say where it ended.

Sir R. TEMPLE said his estimates were taken from the "Statesman's Year Book," and were declared by Mr. Keltie to be derived from the most recent official returns in China.

Mr. FREDERICK HENDRIKS questioned whether Professor Douglas was well founded in the figures he had quoted respecting the Chinese censuses of the last century, which, he could venture to submit, from his recollection of what may be found on the subject in Duhalde and other French writers of that period, were not enumerations of the whole of the people, but nothing more than estimates of the number of males able to bear arms. Given then the number of fighting men between certain ages, a conjectural estimate could be made by the proportions it bore to the whole population male and female, and which would not, by this rough method of calculation, give a total inferior to the 300 or more millions of souls generally ascribed to China more than a century ago. Sir George Staunton, writing in 1797, said that the population might be taken at 333 millions. Now the last Chinese returns, as quoted in Sir Richard Temple's own paper, did not swell this total, although nearly ninety years had passed since the date of the Staunton estimate, by more than 17 millions, the figures being 350 millions. In the concluding part of his paper Sir R. Temple said that on the whole this Chinese return is not incredible or extravagant, although he had just before been shaking our confidence in its details, and had put forward his own view of the figures for each province, making a total for the whole Chinese Empire of only 282 millions instead of 350, or a reduction of say one-seventh. Surely the Chinese, when we come to detail, must be the best judges of which of their provinces are the most densely peopled; and one can scarcely understand why, for instance, they should so much over estimate, according to Sir R. Temple's view, the population of a province such as Kiangsu, as to put it at 37,800,000 instead of 20,265,650, a difference in excess of no less than 88 per cent. It could scarcely admit of doubt that the larger estimate of the two was rather more likely to approximate to the truth, than a mere guess based upon a supposed analogy with the particular density of population of a certain province in India; and we should hesitate to say that the

general rough correctness of the Chinese returns is really shaken by Sir R. Temple.

Mr. J. S. Jeans said it was pretty well known that the population of China was mainly agricultural, and if the rule applicable to other agricultural countries was applied to China, it would be found that the soil was scarcely capable of supporting such an enormous number as the official returns represented. It was true that India had a very dense population, but according to the census of that country the number of persons employed in commercial and industrial pursuits was infinitely larger than most people were prepared to believe. He had been perfectly astounded to find that there were over 400,000 iron and steel workers in India—a number in excess of that returned for this country, where nearly one-half of the whole quantity of iron made in the world was produced. Reference had been made to the opening up of the interior of China, and he was glad to say that there now seemed to be a better prospect than ever before of developing railways there. A project was now pending to connect four of the largest cities in China by railways, and although the difficulties to be encountered had hitherto been deemed insuperable in consequence of the great reverence of "John Chinaman" for his deceased ancestors, who were generally interred in some part of the garden or farm, yet those who had had opportunities of looking around them in China were of opinion that they could be overcome. The Chinese Government was in want of money, and if it could be raised in this country by syndicate or otherwise, he had reason to believe that it would not be long before a start was made in the construction of railways. If that were carried out the whole country would in course of time become accessible to British commerce, and the superstitious and conservative characteristics of the people might become very greatly modified. He had been a little disappointed to find that Sir Richard Temple had not given more details as to the general character of the population of China, upon which much that is interesting could be said.

Mr. Cornelius Walford said that on the whole he was disposed to think that Sir Richard Temple had presented statistics which would prove to be very useful. Hitherto there had been a halo of romance connected with Chinese statistics, and no one could tell how much of what he read belonged to the imagination of the writer. He had hoped to hear more about the river population, and Mr. Douglas had thrown a light upon that subject which he had not thought of before, but his observations would of course only apply to certain rivers. There were others on which whole families were said to live, thereby to a great extent escaping the duties of those in towns, and avoiding enumeration when they did not want to be enumerated. This river population was said to be one of the great problems to be dealt with in arriving at an understanding as to the population of China. He would be glad if any one could throw some light on the duration of human life in China, and there was one other subject that was of special interest

to him. We have been told that on the one hand the Chinese are the most frugal people in the world, and that on the other hand they are the most speculative. Every chance connected with human life which is capable of being insured against was said to be insured against by the Chinese. One branch of their insurance had struck him immensely, namely, what was called insurance against the cruelty of the tiger's tooth. It appeared to be a common occurrence for owners of property who had obligations as to fences, riparian rights, &c., to insure against the chance of being ruined by legal proceedings, under the designation just named.

Mr. H. M. Paul said the last paragraph in the paper implied that the number of Christians in India was very considerable.

Sir R. Temple said the allusion was to the number of Christians throughout the world, which was generally given at 260 or 270 millions.

Mr. Demetrius Boulger said the extraordinary increase that was alleged to have taken place in the population of China during the sixty years' reign of the Emperor Keen Lung, naturally led statisticians to doubt the accuracy of the Chinese returns. At the commencement of his reign the figures were said to be 60 millions, but before he died they had risen to 300 millions. The largest official census of China was taken in 1812, when the number was set down at 360 millions. Although that was very large, the estimates made by foreigners since then had been very much larger. During the last fifty years China had been visited by civil war, famine, and pestilence, and he should have thought those calamities would have decreased the population to a much greater extent than Sir Rutherford Alcock had stated. He was inclined to think the figures now closely approximated those given by Sir Richard Temple; but at the same time, while the standard which the paper applied to China might be accurate in the total result, it would probably not be applicable to special provinces, especially those along the valleys of the great rivers and the Grand Canal. For instance, he should be inclined to think that the Chinese estimates for Kiangsu and Ganhwey were more likely to be correct than those given by Sir R. Temple. It had been said that the population was agricultural, but the lower Gangetic valley was also agricultural. Mr. Jeans had said that there were 400,000 smiths in India, but that was only one-fifth per cent. of the population of India, and in the Gangetic valley there were 500 to the square mile. He thought the population of Kiangsu and along the Grand Canal was equally numerous, and in that case the total would be slightly higher than Sir R. Temple's figures, and slightly lower than those given in the last census return. All that could be hoped for was to approximate to the truth.

Mr. J. B. Martin said it was well known that the best census returns were subject to a considerable amount of error within

limits, but the facts stated by Professor Douglas showed that in this respect the extremes of east and west met. Perhaps there was no country where census statistics were taken with such elaborate care as in the United States. Americans were nothing if they did not do things on a large scale, and every township and city was interested in making its return as large as possible, partly from rivalry with its neighbours, and partly from the fact that the number of representatives in the legislature depended on the population. The census returns had therefore been sometimes regarded with a certain amount of doubt. He mentioned this to show that in accepting census returns the motives for which they were collected must always be taken into account. Whatever might be the population per square mile in China, the question was how far it pressed on the means of subsistence. Did the people eat rats, and cats, and dogs, and mice because they liked them, or because they had nothing else to eat? He regarded the question of Chinese emigration as one of the utmost importance, and within a generation or two it must command very great attention. The United States had found it a very burning question, and seemed to have made up their minds that they would not admit Chinamen. In the Australian colonies there was a very strong expression of feeling to the same effect; but he did not think the Chinaman would be kept out in the end by any restrictions which might be imposed.

The PRESIDENT said that he would only make a few observations. Sir Richard Temple had not gone beyond his original intention, which was to estimate the population of China by the population of India. He did not profess to go into any collateral questions, and therefore those who wished for information upon such subjects must look for them elsewhere. But there was one thing to which he particularly desired to call attention. Under any circumstances he thought they were justified in giving China a larger population than many persons were disposed to admit. The United States' minister had recently mentioned 250 millions as the probable population; while Sir Richard Temple calculated it at 282 millions, and did not think the latest official returns of 350 millions were extravagant. The discussion had been confined to China proper, and had not referred to Manchooria, Mongolia, or Thibet. In the *Journal of the Statistical Society* for March, 1857, there was a very interesting report on the population of China, by Sir John Bowring, who rather agreed with Sir Rutherford Alcock that a certain amount of credit must be allowed to the Chinese estimates. The latest Chinese return was for 1812, or seventy-three years ago. If the population was then 362 millions, and if it had increased at only 1 per cent., it would now be 625 millions. Taking the census of 1762, when it was stated at only 198 millions, and adding 1 per cent. for one hundred years, the numbers would be about 400 millions. In the United Kingdom there were about 300 souls to the square mile, and that rate would give 460 millions for China. Taking the average of British territory in India as 201 to the square mile, it would give 302 millions for China. Holland

had 330 souls to the square mile, at which rate China would have 506 millions. In Barbados the last census gave 1,033 to a square mile, and they were not crowded as in China; they did not eat dogs, cats, rats, and mice, and did not live upon rivers. Sir John Bowring wrote: "The enormous river population of China who live only in boats, who are born and educated, who marry, rear their families, and die, who, in a word, begin and end their existence on the water, and never have a dream of any shelter other than the roof, and who seldom tread except on the deck and boards of their sampans, show to what an extent the land is crowded, and how inadequate it is to maintain the cumberers of the soil. In the city of Canton alone it is estimated that 300,000 persons dwell upon the surface of the river, the boats, sometimes twenty or thirty deep, cover some miles, and have their wants supplied by ambulatory salesmen, who wend their way through every accessible passage." That would give an idea of the crowding of the population of China; and with regard to their supplies he said that they would never exist unless there were vast importations of rice and other food from other countries. The great advantage of Sir Richard Temple's paper was that it showed by a comparison with India a minimum, and it was to be hoped that some one who had sufficient time would take up the subject. He offered to Sir Richard Temple, on behalf of the meeting, their thanks for his valuable paper.

Sir Richard Temple, in reply, said there was a large river population in India as well as in China, and he had applied the averages to districts similarly situated. With regard to the food of the Chinese, he should rather like some modern authority to verify the statements which were commonly accepted. No doubt the Chinese did eat many extraordinary things, but that was probably not from want of other food, and the statement with regard to large importations of food from abroad required verification by the trade returns. Mr. Martin had referred to Chinese emigration, but that was a subject beyond the scope of the paper. It should be remembered that only the men emigrated as a rule. The great objection that the Californian Americans urged against the Chinese was that they did not bring their wives and families with them, and always intended to return to their own country, so that it was impossible for them to become responsible citizens. That was one reason, probably, why all American moralists so greatly objected to having the Chinese in their midst. With regard to Mr. Jeans's remarks, it was scarcely within the scope of the Statistical Society to inquire into the character of the Chinese population. He was not altogether ignorant on that matter, and if Mr. Jeans would do him the honour of referring to certain papers which he read before the Royal Historical Society, he would learn his views with regard to it. He was glad to find that Mr. Douglas thoroughly appreciated the scientific character of the test which had been applied in the paper. No Englishman had ever administered government over a large number of Chinese, so that it was impossible to tell exactly how they would turn out; but the character of Indians was well known. Asiatics were decidedly un-statistical as well as un-

mechanical, and there was not the slightest chance of a Chinese census being worth the paper it was written upon, unless it was carefully supervised by Europeans. He had endeavoured to supply the means by which every one might judge for himself, and the only possibility of error was in the account he had given of the Chinese provinces. No living Englishman was competent to say with entire precision what the character of the interior of China was, and therefore the only question was as to whether his diagnosis of the different provinces of China was correct or not. There was a margin for mistake in that particular respect only, but if he was right on that point his averages were almost certain. With respect to the averages of France or England alluded to by the President, those were limited areas, and statistically it was not scientific to apply to vast areas averages drawn from small areas. The average of Europe per square mile was very inconsiderable compared with the average of England or Belgium, or any other highly populated country. The moment a large area was taken high mountains and barren regions must be included in which the population was very sparse. He felt there might be some doubt about his description of Shansi and Shensi. Professor Douglas considered that they were highly cultivated and densely populated because the soil was very fertile; but he did not think that it necessarily followed that because a country was fertile therefore it was densely populated, and he believed that his description of those provinces was not far from the truth—that there were parts highly cultivated and other parts that were not. One great reason for the reduction he had made in the Chinese return with regard to Pechili was that the whole of that province was not deltaic, a large part being mountainous. Moreover, the delta was not quite so rich as was commonly supposed. No doubt Kiangsu was very rich and populous, but he had taken an average of 505 per square mile, and surely that was a high figure for a large province. Could any scientific assembly believe the average which the Chinese return gave of 941 to the square mile? It was quite true that Honan, Hupi, and Ganhwey were rich provinces, but was it not the fact that there was a good deal of mountainous region in them? Errors arose because people only thought of the very rich tracts; but the whole area should be taken as known to geographers. With regard to Yunnan, where his calculation was in excess of the Chinese return, he considered that he had taken a low average. He had endeavoured to apply a scientific test, and that was worth much more than the so-called facts of Chinese authority. In fine, it were vain, in his view, to cite Chinese authority for statistics. He proceeded on the assumption that all such authority had been discredited. Therefore he had applied a different test, regarding the value of which a society of experts like the Statistical Society would be able to judge for itself.

The Relation *of the* State *to* Thrift; Ten Years' Statistics *of* Friendly Societies *and* Similar Institutions.

By E. W. Brabrook, Esq., F.S.A., F.R.S.L., *Barrister-at-Law, the Assistant Registrar of Friendly Societies for England.*

[Read before the Statistical Society, 21st April, 1885. The President, Sir Rawson W. Rawson, K.C.M.G., C.B., in the Chair.]

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It is ten years to-day since I had the honour to read a paper on this subject before the Society. At that time the Friendly Societies Act of 1875 was under the consideration of Parliament, and I ventured very warmly to advocate the extension of that measure to all the classes of societies with which the Registry Office has to deal. My learned friend Mr. Ludlow, now the Chief Registrar of Friendly Societies, in the discussion which followed, while supporting the view I took, pointed out that its adoption in the then pending Act was hopeless, and the Act in fact, as passed into law, while it made for the societies affected by it many valuable provisions, left other similar institutions in the same relation to the State as before. Subsequent Acts of the legislature, however, have tended to bring the law relating to these institutions more and more closely to the same type, and have thus shown by experience the justice of my contention. I trust the Society will not think me intrusive in asking leave to review the history of the societies during the ten years in question, and to lay before the Fellows some statistical facts relating to the development of thrift, and to its relations with the community at large.

Societies under the Friendly Societies Acts.

The Friendly Societies Act, 1875, did not make registration under it compulsory on the societies within its provisions, but it attached a number of privileges to registration, with the view of inducing the societies to accept it voluntarily. These may be briefly summed up as:—

1. The right to hold land.
2. The summary remedy in case of misapplication of funds.
3. Priority of claim on estates of deceased or bankrupt officers.
4. Transfer of stock by direction of the chief registrar.
5. Exemption from stamp duty on all documents of the society.
6. Permission to admit persons under 21 years of age as members.
7. Reduction of the fee for certificates of birth and death.
8. Power to invest with the National Debt Commissioners.
9. Admission of trustees to copyhold property at a single fine.
10. Discharge of mortgages by endorsed receipt without reconveyance.
11. Power to call officers to account and recover property from them.
12. Power to settle disputes in the manner the rules provide.
13. Power to insure the funeral expenses of members' wives and children.
14. Power to members to nominate for sums at death up to 100*l.**
15. Power to pay sums under 100*l.** without administration.
16. The services of a public auditor at a fixed scale of fees.
17. The recording of its documents in the office of the registrar.†

The first question that arises is to what extent have societies availed themselves of these provisions?

The following continuation of the table in vol. xxxviii, p. 192, of this *Journal* supplies materials for the answer:—

* Fifty pounds by the Act of 1875; increased as stated by the Provident Nominations and Small Intestacies Act, 1883.

† See these privileges more fully stated in the chief registrar's official "Memorandum for the Guidance of Societies."

TABLE I.—*Rules and Amendments of Rules Registered under the Friendly Societies Acts in England and Wales.*

Years.	Rules.			Amendments.	Total.
1793–1855	26,034			14,864	40,898
1855–73	20,058			22,769	42,827
'74	994	21,875		1,334	2,328
'75	823			1,275	2,098
	Societies.	Branches.			
1876	134	183		935	1,252
'77	225	127		1,548	1,900
'78	209	337		2,537	3,083
'79	217	616		3,122	3,955
'80	204	558		2,908	3,670
'81	215	547		2,593	3,355
'82	206	478		2,334	3,018
'83	159	551		1,970	2,680
'84	165	488		2,261	2,920
	1,734	3,885		60,456	113,984
		53,528			

The Act of 1875 introduced a distinction between societies and branches, all lodges, courts, sanctuaries, tents, &c., connected with affiliated orders having been previously counted as separate societies.

Of such previously registered separate societies 8,976 have been converted since the Act of 1875 into registered branches of their orders, raising the total number of acts of registration under the new law to 34,809. This is sufficient evidence that the privileges of registry have been valued by those interested. It cannot be ascertained to what extent unregistered societies continue to exist, and new ones to be founded without registry, but it is obvious that registered societies increase in number in a proportion beyond that of the increase of the population. When the number of registries of rules and amendments together is taken, it is clear that after the first year or two, when the novelty of the Act began to wear off, the average has risen very high; and any apparent diminution in the number of rules is to be accounted for by greater care to prevent duplicate registry, and by the counting every complete new set of rules for an existing society as an amendment only. This is satisfactory; for it is not to be denied that the Act of 1875 requires from societies in return for the privileges it gives many things, the most important being the quinquennial valuation, which we propose presently to consider at some length, that are irksome to the managing body, however useful in the real interest of the

society, and to that extent deter societies from applying for registry.

The Friendly Societies Act, 1875, is framed to comprehend some societies other than friendly societies properly so called. These are :—

(*a.*) Cattle insurance societies.
(*b.*) Benevolent societies.
(*c.*) Working men's clubs.
(*d.*) Specially authorised societies.

(*a.*) *Cattle Insurance Societies.*—These have had since 1866 the privilege of registry, with power to effect insurances without limit as to amount and to recover contributions at law. The Act of 1866 was passed with reference to the then imminent cattle plague, and it was thought that these provisions would be necessary to meet the emergency; but in practice it has been found that the societies registered under it and under the Act of 1875 which continued its provisions are small pig and cattle clubs, which do not dream of incurring risks exceeding 200*l.*, or of recovering contributions at law. They mostly exist in the county of Lincoln. The number registered since 1875 is 10; the total number registered now known to exist, 57; number of members, in 29 societies, 981; amount of funds, 1,882*l.* It will be seen from these figures that they are much less important bodies than the Act of 1866 seems to have contemplated.

(*b.*) *Benevolent Societies* are defined in the Act of 1875 as "societies for any benevolent or charitable purpose." This we have interpreted to mean societies, the benefit of which are designed for others than their members; altruistic societies, so to speak. They have been entitled to registry ever since 1795. Under the Act of 1855 (18 and 19 Vict., cap. 63, sec. 11), societies "for relieving the physical wants and necessities of the poor, or "improving their dwellings, or granting pensions, or providing "habitations for them," might obtain a modified form of certificate, ensuring protection for their funds and enabling them to settle disputes. The Act of 1875 extends to them its full privileges, except those of nomination and the division of funds, and except also that the power to hold land is restricted to one acre. All the provisions of the Act for the protection of members, entitling them:—(1) to copies of rules; (2) to inspection of books; (3) to copies of balance sheets; (4) to have balance sheets hung up in the office of the society; (5) to prosecute in case of misapplication of funds; (6) to sue for penalties for breach of any of these provisions; (7) to prosecute in case of falsification of accounts, apply to registered benevolent societies. Having regard to the

frequency of frauds upon the charitable public, and the grave suspicions excited by mismanagement of charitable funds, it might have been expected that there would have been a general desire on the part of such managers of charities as desire, like Cæsar's wife, to be above suspicion, and on the part of all contributors to charities, to seek the protection and the publicity which the statute enforces. We have endeavoured to make these known as widely as possible, and have drawn up a form of rules for a benevolent society, but the number of applications for registry has been absurdly small. Altogether, only sixty-four benevolent societies are registered as such, of which sixteen have been so registered since 31st December, 1875.

(*c.*) *Working Men's Clubs.*—Societies for the promotion of "social intercourse, mutual helpfulness, mental and moral improve-"ment, and rational recreation," were registered under the Friendly Societies Act of 1855, by virtue of an authority of the Secretary of State, as being societies to which the benefit of that Act ought to be extended. By the Act of 1875 they are registered under the denomination of working men's clubs. The comprehensive definition given in the statute has enabled us to extend to brass bands and similar bodies the advantages of registry, which are appreciated by them, since they comprise more effectual protection to their funds and property than could be otherwise obtained. The right of holding land, and the provision that it vests in the trustees for the time being of the club, are valuable privileges of the Act; yet the number of working men's clubs registered has not been large, being only 236. The principal practical difficulty that has arisen out of the registry of working men's clubs is in connection with the excise laws. In one instance the registry of a working men's club was cancelled on the ground that it existed for the unlawful purpose of evading these laws.

(*d.*) *Specially Authorised Societies.*—By a sort of drag-net clause, the Friendly Societies Act of 1875 enables the Treasury (as that of 1855 did the Secretary of State) to extend its provisions to any societies (*ejusdem generis* being of course implied) to which their lordships may think they ought to be extended. The chief use made of this provision has been by loan and investment societies. Under the names of funding societies, money clubs, &c., these have existed for many years, principally in the North of England, without any form of registry or legal recognition. A decision that when they consisted of more than twenty persons they were unlawful under the Companies Acts, as being companies established for purpose of gain without being registered, and therefore were unable to recover debts or to sue, led them to seek registry under the restrictions of sec. 18 (2) of the Act of 1875.

These limit the interest of each member to 200*l.* and the amount that may be borrowed by an individual to 50*l.* In societies enrolled under the 3 and 4 Vict., cap. 110 (the Loan Societies Act of 1840) the amount of each loan is limited to 15*l.* Altogether 226 specially authorised societies have been registered.

This completes the account of the societies registered under the Friendly Societies Acts. It will now be interesting to consider the effect of the alterations in the law which were made by the Act of 1875. The first important alteration is that enabling branches to be registered as such, and not as independent societies, and the machinery introduced by the Amendment Act of 1876 for converting previously registered societies into branches. The number of such conversions in each year has been as follows:—

In 1876	40
„ '77	775
„ '78	1,709
„ '79	1,978
„ '80	1,522
„ '81	1,044
„ '82	811
„ '83	562
„ '84	535
	8,976

This added to the 3,885 new branches registered (see Table I) makes a total of 12,861 bodies which have adopted the system of complete affiliation provided by the Act of 1875. There are still, of course, numerous lodges, courts, &c., registered as separate societies, but the steady decline in the number of conversions since they attained their maximum in 1879 leads to the conclusion that the Act has nearly fulfilled its purpose in this respect.

Another vitally important alteration in the law is that requiring every friendly society to make once in every five years a valuation of its assets and liabilities. This was a provision of the Act of 1846 (9 and 10 Vict., cap. 27, sec. 5), which also required the tables of every society insuring sick pay or mortality benefits to be certified by a qualified actuary (sec. 13); but that Act was repealed by the consolidating Act of 1850 (13 and 14 Vict., cap. 115), which, while maintaining the requirement of an actuary's certificate for the class of societies to be termed "certified," did not re-enact the provision for a quinquennial return of assets and liabilities. As the Act containing it therefore was not in force for a single quinquennium, it may be said in this respect to have been a dead letter. Not so, however, the Act of 1875. It provides a means of enforcing its requirements which has been used with excellent effect. Besides the

power to recover a penalty for default, the chief registrar is vested with power to suspend and in the result to cancel if necessary the registry of a society which wilfully and after notice from a registrar violates any of the provisions of the Act. In the years 1881-83 the following suspensions, renewed suspensions, and cancellings took place :—

	Notices before Suspension.	First Suspension.	Second Suspension.	Third Suspension.	Cancelling.
1881	115	40	19	13	9
'82	25	3	21	—	10
'83	62	35	12	5	3
'84	55	26	22	15	11
	257	104	74	33	33

The efficiency of this means of enforcing the law is shown by the fact that several societies whose registry had been cancelled have since applied to be restored to the register. During suspension and after cancelling a society ceases to be entitled to the privileges of registry, cannot invest its funds with the Post Office or the National Debt Commissioners, is no longer exempt from stamp duty, or entitled to certificates of death at a reduced charge. Notice therefore of every suspension or cancelling is given to the four public departments concerned.

At present the results of these valuations have only been published for the societies as distinguished from branches by which valuations had been made during the five years ending 31st December, 1880. They are contained in a volume of nearly 1,200 pages. As it is of course not easy to examine in detail so large a mass of matter, I propose to take every sixtieth page as a specimen, and thus, from eighteen groups of societies, endeavour to form a judgment as to the real meaning of these valuations. The general total for England and Wales was 6,567 societies. In 4,628 cases the society's experience did not appear to have been compared with the tables used; in 392 negative values had not been eliminated; in 60 the expenses of management had not been provided for; in 3,874 the societies charged uniform contributions for all ages at entry; in 857 death benefits were reassured with districts; in 1,394 the valuations had been made by public valuers under the Act; while 239 belong to none of these classes.

The general result of the valuations was that 1,537 societies showed a surplus, and 5,030 a deficiency. How far that was to be attributed to the rate of interest assumed in the tables may be ascertained from the following table :—

Rate of Interest.	Percentage of the Societies showing Surplus.	Percentage of the Societies showing Deficiency.
$2\frac{1}{2}$	0·3	0·3
3	72·3	89·1
$3\frac{1}{2}$	6·2	2·8
$3\frac{3}{4}$	0·1	0·0
4	20·9	7·7
$4\frac{1}{2}$	0·2	0·1
—	100·0	100·0

It would seem therefore that of those producing a surplus 27·4 per cent. were valued at rates exceeding 3 per cent., as against 10·6 per cent. of those producing a deficiency. An aggregate balance sheet of the societies having a surplus might be constructed as follows:—

Liabilities.	£	*Assets.*	£
Present value of benefits....	8,699,876	Amount of funds	4,002,070
Other liabilities	1,585,267	Present value of contributions	7,035,729
Surplus	885,382	Other assets	132,726
	11,170,525		11,170,525

A similar balance sheet for the aggregate of societies having a deficiency would stand:—

Liabilities.	£	*Assets.*	£
		Amount of funds.....	4,378,781
Present value of benefits....	24,705,276	Present value of contributions	16,030,863
Other liabilities	1,445,315	Other assets	585,131
		Deficiency	5,155,816
	26,150,591		26,150,591

and an aggregate balance sheet of all the societies valued would give:—

Liabilities.	£	*Assets.*	£
		Amount of funds.....	8,380,851
Present value of benefits....	33,405,152	Present value of contributions	23,066,592
Other liabilities	3,030,582	Other assets	717,357
Surplus (in 1,537 societies)	885,382	Deficiency (in 5,030 societies)	5,155,816
	37,321,116		37,321,116

This appears, at the first glance, to be a sufficiently serious result; but before asking you to take it into consideration in detail,

I will take the liberty to repeat some remarks I made on the subject in 1881, in my preface to the tenth edition of "Pratt's "Law of Friendly Societies," having good reason to suppose that some such result would appear from the valuations, of which at the time of writing only a few had been received :—

"A word of caution may be added against forming too hasty "conclusions adverse to friendly societies, if it should turn out that "the valuations in many cases show an estimated deficiency in the "funds to meet the liabilities. It would be strange if it were other- "wise, when for the first time scientific tests are applied to con- "tracts that have been in operation without a scientific basis for a "long series of years. It must be borne in mind, however, that "nothing is more elastic than the contract made by a friendly "society with its members; no error more easy of remedy if found "out in time than one existing in the original terms of such a con- "tract. Hence the words 'insolvency,' 'rottenness,' and the like, "which we sometimes hear freely used as describing the general "condition of friendly societies, are utterly out of place. Of "friendly societies in general it may be said that as there are no "associations the benefits of which are more important to their "members, so there are none that are managed with greater recti- "tude, and few with equal success."

To show this, I submit the following analysis, prepared for me by Mr. E. F. Brabrook, LL.B., of the eighteen selected groups, which from their variety seem to be likely to give a very fair specimen of the whole. I compare the general result with the result where the societies whose experience has not been taken into account, marked A, and those who work by uniform contributions, marked D, are excluded :—

TABLE II.

Page in Return.	County.	Places.	All Valuations. Number.	Funds.	Valuation of Benefits.	Valuation of Contributions.	Other Liabilities.	Other Assets.
				£	£	£	£	£
60	Cambridge	Ely—Mar.....	14	6,724	34,168	20,423	1,016	542
120	Derby.....	Che.—Chu...	16	7,475	50,848	30,966	3,477	592
180	Durham.....	Har.—Heb.	20	4,975	54,337	34,787	493	667
240	Gloucester.....	Tew.—Yor.	13	14,259	45,906	21,117	1,790	57
300	Lancaster	Acc.—Ash....	14	6,027	33,015	22,783	187	162
360	,, ...	Liverpool	13	6,193	17,141	10,123	17	43
420	,, ...	Mid.—Mus.	14	11,615	42,429	22,721	31	29
480	Leicester	Som.—Wal.	17	8,076	31,422	17,527	1,187	—
540	Middlesex	Metropolis....	13	2,455	35,343	17,090	2,077	2,395
600	Norfolk	Sou.—Tho. ..	12	7,214	30,520	16,100	447	78
660	Notts and Oxon	War.—Bar.	8	3,122	16,071	10,222	515	29
720	Stafford	Gor.—Han.	14	32,702	78,794	48,902	449	68
780	Surrey	Metropolis....	18	15,406	82,993	48,127	4,780	8,017
840	Westmoreland	Whole county	12	17,522	48,674	23,358	1,895	910
900	York	Dod.—Dun.	21	7,127	186,171	140,744	1,128	1,055
960	,, ...	Pen.—Que..	10	5,650	18,856	9,589	306	317
1020	Denbigh.....	Ab.—Con.	13	11,069	55,408	33,202	1,659	1,996
1080	Glamorgan	Trea.—Treh.	20	7,383	37,341	27,611	—	87
	Total of 18 pages		262	174,994	899,437	555,392	21,454	17,044
	,, × 25		6,550	4,374,850	22,485,925	13,884,800	536,350	426,100
	Real total, exclusive of collecting societies		6,528	7,176,566	28,933,803	17,891,878	1,038,421	676,887

The 185 (A) cases where the experience of the society has not been compared with the tables used have been excluded, for the obvious reason that a valuation so made is not likely to be trustworthy; but the exclusion of the 172 (D) cases in which the societies are worked by uniform contributions proceeds upon a different ground. These societies are the relics of the pre-scientific age in friendly societies, and though they disregard the actuarial canons of propriety, they are very popular as long as their prosperity lasts. This can be only as long as younger men are willing to pay more than they ought in order that the older members may pay less than they ought. That sort of thing may and often does continue for a considerable time; but when looked at by the valuer it produces the result that the younger men's contracts have negative values. These the valuer eliminates, and hence the valuations show in these cases the results of the society's bad bargains only, where the members admittedly pay less than they ought to do, but rejects the results of the good bargains where the members with their eyes open pay more. The valuation in these cases therefore does not represent the real condition of affairs, and should be left out of view.

TABLE II.

All Valuations.		Valuations Omitted.		Remaining Valuations.							
Surplus.	Deficiency.	A.	D.	Number.	Funds.	Valuation of Benefits.	Valuation of Contributions.	Other Liabilities.	Other Assets.	Surplus.	Deficiency.
£	£				£	£	£	£	£	£	£
189	7,684	8	11	3	1,327	5,961	4,428	343	505	189	233
436	15,728	13	10	—	—	—	—	—	—	—	—
953	15,354	20	18	—	—	—	—	—	—	—	—
324	12,587	9	6	2	8,690	21,491	6,782	1,457	—	33	7,509
1,744	5,974	10	11	1	131	2,170	1,459	—	—	—	580
1,510	2,309	2	3	10	5,770	13,719	8,131	—	—	1,510	1,328
438	8,533	10	10	3	1,311	7,064	4,024	—	—	—	1,729
115	7,121	7	12	4	2,630	8,216	5,032	—	—	83	637
146	15,626	9	6	1	934	19,079	5,708	53	—	—	12,490
832	8,407	10	8	—	—	—	—	—	—	—	—
579	3,792	5	4	1	408	695	621	172	—	162	—
7,239	4,810	9	5	4	21,635	57,548	40,030	8	25	5,981	1,847
14	16,237	12	9	1	832	5,519	2,812	70	—	—	1,945
1,717	10,496	8	4	4	6,166	16,522	7,012	125	—	—	3,469
501	38,874	19	17	1	273	1,116	628	—	—	—	215
188	3,794	9	7	—	—	—	—	—	—	—	—
2,198	12,998	11	11	1	1,348	5,786	3,402	611	979	—	668
1,764	4,024	14	20	—	—	—	—	—	—	—	—
20,887	194,348	185	172	36	51,455	164,886	90,069	2,839	1,509	7,958	32,650
522,175	4,858,700	4,625	4,300	900	1,286,375	4,122,150	2,251,725	70,975	37,725	198,950	816,250
718,656	4,945,549	4,606	3,869	—	—	—	—	—	—	—	—

Omitting these A and D societies, let us see how the case stands with regard to the remainder of those casually selected in the foregoing table. Of course the extent to which they would turn out to be representative of the whole was not known beforehand. It is satisfactory to find therefore that these eighteen pages give almost exactly $\frac{1}{25}$th of the total number, $\frac{1}{25}$th of the whole deficiency, $\frac{1}{25}$th of the A's, and more than $\frac{1}{25}$th of the D's. In all other respects they are considerably less than $\frac{1}{25}$th. We thus get a representation much more unfavourable to my view than if we had succeeded in getting a complete average all round; for we have a full $\frac{1}{25}$th of the deficiency, but much less than $\frac{1}{25}$th of the funds and values out of which that deficiency arises; yet with this disadvantage, in the thirty-six valuations which escape the taint of the A or the D, the surpluses are to the deficiencies as 1 to 4 in amount instead of 1 to 7 as in the real total, and 1 to $9\frac{1}{2}$ in the total of the selected pages. These deficiencies happen to include one very bad case (the sick and burial fund of the Loyal Ancient Independent Order of Odd Fellows) where the contributions would require to be increased threefold or the benefits diminished to one-third to restore the balance, the assets being only one-thirteenth of what

they ought to be. This, however, as Mr. Neison remarks with justice in his recent work, is not the way to meet a deficiency, the proper course being to raise the rates for the future to what they ought to be, and make up the past deficit by a levy. Apart from this case, there is nothing in the deficiencies which the societies cannot easily meet, and no ground for the impression that societies generally have gone irretrievably wrong.

A third important alteration in the law made by the Act of 1875 was that which directed that annual returns should be in a prescribed form, and not as heretofore merely a copy of such statement as the society chose to lay before its members. The following table (in continuation of Table III, *Journal of the Statistical Society*, 1875, pp. 204 and 205) shows the steady improvement in the returns from 1873 to 1880:—

TABLE III.—*Friendly Societies.*

	Number of Returns Sent Out.	Number of Returns Received.	Amount of Funds when stated.	Number of Members when stated.
			£	
1873 (as in former paper)	21,659	11,926	8,630,525	1,787,291
1874	21,547	11,490	9,038,290	2,075,893
'75	26,087	11,282	9,336,949	3,404,187
'76	25,234	12,338	10,226,883	4,364,772
'77	24,409	12,270	11,109,571	4,608,794
'78	24,137	12,300	12,148,609	4,692,175
'79	22,357	12,943	12,741,191	4,650,754
'80	17,487	12,867	13,002,974	4,802,249

The returns will in future be only published once in five years, the great labour and cost of an annual publication being now deemed unnecessary. The increase in the number of returns sent out in 1875 arose from the opportunity taken of sending forms to all societies whose existence was doubtful, with a view of clearing the register of them before constructing a new register under the new Act. The decrease in later years arises from the practice of societies having branches supplying them with their own forms of return.

A fourth novel feature in the law introduced by the Act

of 1875 is worth noticing, inasmuch as it has been put into successful operation in a considerable number of cases. It is the special power given to the chief registrar to appoint inspectors, or call a general meeting of a society, when moved to do so by a certain proportion of its members, varying inversely with the size of the society, but never exceeding one-fifth. Fourteen inspections and ten special meetings have been held. When it is remarked that a similar power has been vested in the Board of Trade with regard to public companies ever since the year 1862, but has not (so far as I am aware) been ever put in operation, it is remarkable that it should have been used on so many occasions under the Friendly Societies Acts. In some cases the inspections have been useful in tracing irregularities in management which the society, from the circumstances of its members, could not have fully detected; in some cases the special meetings have enabled the society to reorganise its constitution, or to amend its rules, when it would not have been able to do so in the ordinary course. In nearly all cases it is believed they have been useful.

Trade Unions.

The second class of societies referred to in the paper of 1875 is *Trade Unions*. At that time the connection between them and the State was the slightest possible. They were allowed to register under the Act of 1871, and if registered were required to make annual returns, but the registrar had no discretion to refuse to register any rules presented to him, provided only they contained certain specified provisions, and the chief distinction between a registered and an unregistered trade union was in the right to take proceedings against a person for mere misapplication of the funds not involving embezzlement, which a registered union had, but an unregistered union had not. An Act passed in 1876 has somewhat modified the relation of trade unions to the State in these respects. By giving the chief registrar the power to cancel registry under certain circumstances, it has imposed upon the registrar the duty of seeing that the rules are not such as would expose the union to that risk; and by extending to registered trade unions the privileges of nomination, membership of minors, exemption from the Life Assurance Companies Acts, &c., it has increased the inducement to registry, and also greatly approximated the law relating to trade unions to that relating to friendly and other societies. One step therefore has been taken in this respect towards the uniformity of legislation which it was my principal object in the paper of 1875 to advocate. The Provident Nominations Act of 1883 is another step in the same direction.

Notwithstanding this, the progress in the registry of trade unions has been small, as shown by the following table:—

TABLE IV.

	Number of Trade Unions.	Number of Returns.	Funds.	Income.	Number of Members.
			£	£	
31st December, 1873....	118	104	215,479	269,982	264,357
„ '78....	177	124	309,223	255,024	202,984
„ '83....	195	144	431,495	292,720	253,088

The richest registered trade union is the United Society of Boiler Makers and Iron Shipbuilders, which has now 81,344*l.* funds, 67,361*l.* income, and 27,403 members. Of this union the chief registrar remarks that its funds had fallen in 1880 to 9,195*l.* The largest is the Durham Miners' Association, with 37,000 members, 26,757*l.* funds, and 31,017*l.* income. The Amalgamated Association of Miners, which was the largest in 1873, has disappeared from the list, having been broken up into local unions. The accumulated funds of the unions, which in 1873 were less than one year's income, amount now on the average to nearly one and a half year's income. The increase per member in the accumulated funds has been from 16*s.* 4*d.* to 1*l.* 14*s.* 1*d.*, or more than 100 per cent. in the ten years.

Building Societies.

For the paper of 1875 no statistics were available as to building societies, the Act of 1874 not having been then twelve months in operation. The returns which have since been made under that Act show that the extent of the operations of these societies is much greater than was formerly supposed. With regard to societies existing on the 2nd November, 1874, the Act left it optional whether they should avail themselves of its provisions or remain under the Act of 1836, and no exact knowledge is to be had of the number of societies which still remain unincorporated. They grow fewer of course each year, from two causes: some become incorporated, and others finish their term of existence and break up. The following are the latest statistics relating to incorporated building societies:—

TABLE V.

	Societies under Act of 1836 which have become Incorporated.	New Societies Established since 2nd November, 1874.	Total.
Total number of existing societies	474	1,379	1,853
Number of returns	464	1,233	1,697
,, members	269,586	244,081	513,667
Average for each society	642	198	332
Receipts during last financial year	£15,873,800	£5,291,411	£21,165,211
Average for each society	£34,211	£4,291	£12,531
Liabilities—	£	£	£
To shareholders	23,960,898	7,105,989	31,066,887
,, creditors	13,493,221	2,760,216	16,253,437
Balance of unappropriated profit	1,319,531	385,843	1,705,374
	38,773,650	10,252,048	49,025,698
Assets—			
Mortgages	36,789,368	9,436,801	46,226,169
Other assets	1,937,285	774,866	2,712,151
Balances deficient	46,997	40,381	87,378
	38,773,650	10,252,048	49,025,698

The Act of 1874, though similar to the law then existing with regard to friendly societies and trade unions, does not apply to building societies many excellent provisions contained in the Friendly Societies Act of 1875. In lieu of an annual return in a prescribed form at a fixed date, it requires the society to send to the registrar a copy of the report presented to the members at the annual meeting of the society, within fourteen days after such meeting. Now as some societies take nearly eleven months from the time of closing the annual accounts before they present them to the members at a meeting, and as others hold their annual meeting immediately at the close of the financial year, it is very difficult to use the returns for the statistical purpose of measuring the growth from year to year of building societies. In fact each return to parliament is compiled from accounts which range over the whole of the two years preceding its date. Moreover, the great variety of forms in which the societies draw up their balance sheets causes great difficulty in ascertaining the particulars required by the Act to be stated in their returns. Again, the excellent provisions for inspection of the books of societies by members and others interested, and for the official appointment of inspectors upon the motion of a competent number of members, are absent from the Building Societies Acts.

The number of new building societies established has greatly

increased of late, the average of the four years 1881-84 having been 208 per annum. This is not so much matter of congratulation as it seems; for there has grown up in several quarters a business of building society promoters, who have started what are aptly called by a writer in the "Building Societies Gazette" "copyright-" rule societies." These gentlemen arrange with a printer to have rules set up in type with the exception of name and place of meeting, obtain the concurrence of three or four expectant officials in each town, and start a building society there. A few persons join it, only to find, after it has had a brief struggle for existence, that their subscriptions have been absorbed by the claims of the proprietor of the supposed copyright for the use of his rules, for his trouble in starting the society, and for supplying it with account books, seal, and other necessaries. This is literally what has only too frequently happened, and persons who are solicited to become directors or members of new building societies should first ascertain clearly what the position of their society is in this matter.

Industrial and Provident Societies.

In the paper of 1875 it was stated that the promoters of industrial and provident societies, usually termed co-operative societies, had the intention of proposing a measure by which the law relating to these societies would be made precisely the same as that relating to friendly societies, so far as the different purposes of the two classes of society would admit of it. That intention took effect as the Industrial and Provident Societies Act, 1876. An industrial and provident society exists for carrying on some labour, trade, or handicraft, and has the privilege of incorporation, with the requirement that "limited" shall be the last word of its name. The following table shows the progress of these societies during the ten years 1873-83:—

TABLE VI.

	1873.	1878.	1883.
Number of societies making returns..	790	963	870*
,, members	340,930	490,584	576,477
Increase of members during the year	38,734	28,918	3,867
Amount of share capital paid up.....	£3,334,104	£5,347,199	£6,871,590
,, loan capital.....	431,808	692,478	1,165,956
Sales of goods during the year	13,651,127	18,461,753	23,583,503
Stock in trade.....	1,439,137	2,281,898	2,727,146
Net profit of the year	958,721	1,565,497	1,926,488

* Exclusive of 84 land societies. The total number of societies registered under the Act is 1,113.

For particulars as to land societies under this Act, I may refer

to a short communication which appeared among the Miscellanea in the *Journal* of the Society for December, 1883.

Savings Banks.

The progress of savings banks during recent years has been very great. In the year 1873 the deposits in trustee savings banks were 40,525,089*l.* On the 28th February, 1885, the fund for the trustee savings banks was 45,799,433*l.* In 1873 the deposits in post office savings banks were 21,167,749*l.*; on 28th February, 1885, the post office savings bank fund was 46,084,697*l.* The post office savings bank has at last outstripped the older form, and between the two the enormous sum of 91,884,130*l.* has been accumulated.

In addition, the excellent Act of 1880 has enabled depositors in savings banks to purchase stock, and they have availed themselves of this privilege to the extent of 2,592,943*l.*; of which 2,084,284*l.* has been transacted by the post office bank, and 544,658*l.* by the trustee banks.

The total funds therefore belonging to depositors in savings banks are 94,477,073*l.*

Notice should also be taken of the provisions of the Government Annuities Act, 1882, which largely extended the powers of the Government to grant annuities and assurances through savings banks.

The State with regard to post office savings banks is the contractor, the manager, and the banker. The depositor relies entirely upon it. With regard to trustee savings banks the depositor is equally passive, but the place of the State is taken by a body of voluntary unpaid trustees and managers.

In both cases when disputes arise they are settled by the registrar of friendly societies.

Scientific and Literary Societies.

One of the special authorities for registry of societies under the Friendly Societies Acts has been granted to "Societies for the "promotion of Literature, Science, and the Fine Arts" (3rd July, 1878), and another to societies for the special purpose of the promotion of the knowledge of music (3rd October, 1879). Few societies, however, have availed themselves of these authorities.

The Act enabling the registrar to grant a certificate of exemption from rates to such societies remains in force, but each successive case tried in the Law Courts upon its provisions narrows their construction, and the number of certificates granted during the ten years 1875-84 inclusive has been only 36.

While these societies are similar to friendly societies for the

reasons stated in the paper of 1875, and should be dealt with in the same manner, they are not institutions for thrift, and therefore do not bear on the more special purpose of the present paper, which is rather to gather indications from the experience of societies as to the proper relation of the State to them, than to urge further the argument for uniformity of legislation, which has already gained ground by its own weight.

Loan Societies.

With regard to these bodies the following is a comparison of the returns for 1873 and 1883 :—

TABLE VII.

	1873.	1883.	Increase.	Decrease.
Number of societies making returns..	464	438	—	26
„ members	32,100	42,895	10,795	—
Payment of members to capital in the year	£204,128	£111,426	—	£92,702
Amount in borrowers' hands	£380,543	£319,890	—	£60,653
„ circulated during the year....	£613,963	£506,432	—	£107,531
Number of applications for loans during the year	134,700	97,209	—	37,491
Number granted.....	124,664	91,240	—	33,424
Amount received for interest, &c.	£38,459	£26,543	—	£11,916
Expenses of management	£17,797	£13,220	—	£4,577
Net profit	£17,461	£17,452	—	£9
Summonses issued during the year	8,201	5,096	—	3,105
„ to recover	£15,896	£11,345	—	£4,551
Distress warrants issued	1,614	771	—	843
Amount recovered....	£12,772	£9,954	—	£2,818
Costs not recovered from borrowers..	£337	£317	—	£20

It will be observed that in every respect except the number of members, the operations of these societies have diminished during the ten years. It is fair to remark on the other hand that many loan societies have been registered as specially authorised.

Railway Savings Banks.

Three of these, established under private Acts of Parliament, were enumerated in the paper of 1875. A parliamentary return made in 1876 shows that there were then nine such societies, with 7,898 depositors and 153,512*l.* capital. Since then three have been registered. Four of those in the list of 1876 now return 7,615 depositors instead of 3,778, and 569,006*l.* deposits instead of 81,007*l.* One of the new ones returns 265 depositors and 3,838*l.* deposits. The total may therefore be taken to be at least 11,995 depositors, and 645,331*l.* deposits; probably much more.

Summary of Institutions for Thrift.

From the previous statement it appears:—

		£
That the capital invested in and through savings banks is	(U. K.)	94,477,073
In railway savings banks		645,331
„ incorporated building societies	(E. & W.)	48,938,320
„ loan societies	(„)	340,403
„ industrial and provident societies	(„)	8,209,722
„ societies under the Friendly Societies Acts	(„)	13,002,974
„ registered trade unions	(„)	431,495
Total		166,944,318

To this must be added the capital possessed by unincorporated benefit building societies and unregistered friendly societies and trade unions, as well as that of societies registered in Scotland and Ireland. What all these may amount to cannot be stated, but it is probably enough to raise the total to 200,000,000*l.* The increase during the ten years has been very great, and the whole subject presents an encouraging view of the thrifty habits of the industrial classes, and of the extent to which they have been accumulating capital for future needs. If their disposition to do so is allowed free scope, it may be expected to find fresh development, and to become even more multiform.

Viewed in relation to the State, we find the following varieties:—

1. Unregistered societies. To them the State has nothing to say, except that it provides a remedy by Russell Gurney's Act (31 and 32 Vict., cap. 116) in case of embezzlement of their funds, and restrains them from illegal payments on the death of children, and from breach of the restrictions upon collecting societies. If they carry on business for profit and consist of more than twenty members, they are unlawful.

2. Benefit building societies, enrolled under the Act of 1836, and not incorporated. None of these are less than ten years' old, and the State asks of them no returns, and exercises over them no control. It grants them, however, important fiscal exemptions, the right of vesting estates in trustees without reconveyance, the power to discharge mortgages by a mere receipt, and other privileges.

3. Trade unions registered under the Acts of 1871 and 1876. They have great freedom of organization, the right of enrolling minors as members, of payment to nominees on death, protection against misapplication of funds, and other privileges; and are required to make annual returns.

4. Loan societies. Closely restricted with regard to the maximum of loan and the rates of interest and inquiry fee, and required to make an annual return in prescribed form, but allowed summary remedy before magistrates for debts, and other privileges.

5. Building societies incorporated under the Act of 1874. Allowed much freedom of organisation and modified fiscal privileges, but required to make annual returns under certain express conditions.

6. Industrial and provident societies for carrying on trade. Allowed the privilege of incorporation, but no fiscal privileges, and otherwise placed in the same position as friendly societies.

7. Friendly societies. Allowed the fiscal and other privileges mentioned under seventeen heads in the early part of this paper, but required to make annual returns and quinquennial valuations, and to comply with conditions imposed upon them for the protection of their members.

8. Trustee savings banks. Closely supervised by the national debt commissioners, and restricted in their investments to the public debt, but managed upon the responsibility of voluntary unpaid trustees and not of the State.

9. The Post Office savings bank. Managed entirely by a department of the State, and giving the direct security of the nation for deposits made with it. In this may be included the life insurance and deferred annuity department.

The logical resting place among all these varieties has been sought at both extremes. There are those who would extend the direct operation of the State so as to confer upon every individual, from the heir to the throne, to the—

> "Babe,
> "Ditch-delivered, of a drab,"

when he becomes of age, whether he like it or not, a deferred annuity policy, under the State guarantee, combined with an assurance of sick pay. The scheme, I expect, will be "birth-"strangled," for its promoters have not shown, and, as far as I understand their proposals, they do not appear to comprehend the elementary conditions of its success. I do not therefore deem it necessary to discuss them on this occasion.

On the other hand, there are (or used to be) those who would leave all provident societies to their own devices, and if registering them at all, would do no more for them. That was the principle of a Bill introduced in the year 1870 by the present Lord Sherbrooke, and it is certainly capable of defence upon logical grounds, but it is not now often urged by practical men.

The real difficulty of the question is that it is not one in which a logical resting place can be found. If the State interferes too

much, it does more harm than good; if it interferes too little, it leaves open avenues to fraud through which cruel wrong may be inflicted on persons who can do little to help themselves. I venture to think that the present Friendly Societies Acts very nearly hit the just mean. The Acts afford to the members, or rather thrust upon them, the means of ascertaining how their affairs are managed, and protecting their own interests; they secure effective official intervention when a competent number of the members desire it, but not on the mere initiative of the government department itself; in a word, the guiding idea is to promote enlightened self-government of the societies: control from within and not from without. I renew the plea I urged before this Society in 1875 for greater uniformity in legislation on these matters, and I enforce it by the subjoined tables, which show that, though the procedure for registry of societies has made some progress towards uniformity, the statutes affecting them have increased in number rather than diminished during the ten years. I claim for the Friendly Societies Act of 1875 the just praise attributed by my friend M. Laurent, now president of the prefectoral council of the Seine, in 1865, to the statutes then in force:—

"Empêcher la mauvaise administration intérieure des sociétés, "les obliger à s'organiser d'une manière scientifique; les amener "à se placer spontanément, dans leur propre interêt, sous la "surveillance du gouvernement; voilà le triple but de la législa-"tion anglaise: éclairer et encourager sans prétendre à gouverner; "voilà sa pensée dominante. Il est impossible de ne pas admirer la "haute sagesse de cette législation."

And I venture to repeat what I have said elsewhere ("Ency-"clopædia Britannica," ninth edition, Art. "Friendly Societies") that if it be the fact that the classes among whom friendly societies are formed are averse to undertakings involving mental labour, and the idea of periodical returns and of the other requirements of the statutes is more alarming to them than it need be, it will be the province of those charged with the administration of those statutes to endeavour as far as possible to combat this tendency, and by wise use of the materials in their hands, to seek to show the societies that the registry office is a ready and useful auxiliary to them, and that the trouble it gives them is more than met by compensating advantages.

TABLE VIII.—*Comparative Statement of the Procedure*

	Friendly Societies, including some Benevolent and other Societies. 38 and 39 Vict., cap 60.	Industrial and Provident Societies. 39 and 40 Vict., cap. 45.	Trade Unions. 34 and 35 Vict., cap. 31.
Number of copies of the rules* to be furnished	2	2	2
Whether written or printed	Either	Either	Printed
By whom to be signed	7 members and the secretary	7 members and the secretary	7 members
What provisions they are to contain	Those required by Schedule to Act	Those required by Schedule to Act	Those required by Schedule to Act
With what documents the rules are to be accompanied	Application for registry and list of trustees	Application for registry	Application for registry
What the registrar is to do with them*	Ascertain whether the society has complied with provisions of the Act, and issue an acknowledgment of registry	Same as Friendly Societies	Ascertain that the regulations are complied with, and the required provisions contained in the rules
Purport of the acknowledgment	That society is registered	That society is registered	That trade union is registered
What fee is payable	None	None	£1
What is done with the transcripts of rules	Kept by registrar	Kept by registrar	Kept by registrar
Effect of registry	That the society is entitled to privileges and subject to the provisions of Acts	That the society becomes a corporate body, and the provisions of the Acts apply to it	That the provisions of Act apply to the trade union
Authority of registrar or chief registrar over society after certificate	To register alterations; to require and enforce returns and valuations; to transfer stock; to record trustees and registered office; to prosecute for misappropriation of funds; to restrain change of name; to dissolve an insolvent society; to advertise a voluntary dissolution; to appoint inspectors and call special meetings upon proper application; to settle disputes by consent; to cancel registry in certain cases	To register alterations; to require and enforce returns; to restrain change of name; to record registered office, and proceedings in winding up, and generally the same as in Friendly Societies	To certify alterations; to require and enforce returns; to record place of meeting; to cancel registry in certain cases

* The practice under all the statutes is for a draft copy, either manuscript or printer's proof, to

for Registry of Rules under several Acts of Parliament.

Savings Banks. 26 and 27 Vict., cap. 87.	Building Societies. 37 and 38 Vict., cap. 42.	Loan Societies. 3 and 4 Vict., cap. 110.	Scientific and Literary Societies. 6 and 7 Vict., cap. 36.
2	2	3	3
Either	Printed	Either	Either
2 trustees	3 members and the secretary	3 members and the secretary	The president, 3 of the council, and the secretary
Those required by sec. 6 of Act	Those required by 37 & 38 Vict. cap. 42, sec. 16	Those required by secs. 22 and 23 of Act	A rule prohibiting division of money among the members
—	Application for registry	—	—
Ascertain whether they are in conformity to law, &c.	Ascertain whether they contain the required provisions, and are in conformity with the Act	Ascertain whether they will carry out the intention of the framers, and are in conformity to law	Ascertain whether the society is one entitled to the benefits of the Act
That rules are in conformity to law and with provisions of Act	That society is incorporated under Act	That rules are in conformity to law and with provisions of Act	That society is entitled to benefits of Act
£1	£1	One guinea	One guinea
Sent to National Debt Commissioners	Kept by registrar	One sent to clerk of peace, the other kept	One sent to clerk of peace, the other kept
That the provisions of Act apply to the savings bank	That the provisions of the Act apply to the society	That the provisions of Act apply to the society	That the society is exempt from local rates in respect of any building occupied exclusively for its purposes
To certify alterations; to settle disputes	To certify alterations; to require and enforce returns; to transfer stock; to register change of name; to register dissolution; to determine disputes, if required [The registrar has other functions in respect to societies certified under 6 & 7 Wm. IV, cap. 32, and their incorporation.]	To certify alterations; to require and enforce returns	To certify alterations affecting property or constitution of society

be submitted in the first instance for examination before the fair signed copies are sent for certificate.

TABLE IX.—*Statutes affecting Societies.*

38 and 39 Vict., cap. 60 39 „ 40 „ 32 42 „ 43 „ 9 45 „ 46 „ 35	Friendly societies.
39 and 40 Vict., cap. 45	Industrial and provident societies.
34 and 35 Vict., cap. 31 39 „ 40 „ 22	Trade unions.
37 and 38 Vict., cap. 42 38 „ 39 „ 9 40 „ 41 „ 63 47 „ 48 „ 41	Building societies.
10 Geo. IV, cap. 56 4 and 5 Wm. IV, „ 40 6 „ 7 Wm. IV, „ 32	Benefit building societies.
26 and 27 Vict., cap. 87 39 „ 40 „ 52 45 „ 46 „ 51	Savings banks.
3 and 4 Vict., cap. 110 26 „ 27 „ 56	Loan societies.
6 and 7 Vict., cap. 36 17 „ 18 „ 112 30 „ 31 „ 131	Scientific and literary societies.
46 and 47 Vict., cap. 47	Provident nominations and small intestacies.
Twelve private Acts	Railway savings banks.

Discussion *on* Mr. Brabrook's Paper.

The Rev. Canon Blackley said he had listened with the greatest attention and approval to the reading of the paper, confined as it was to its proper historical subject, until the last few paragraphs were reached. Many proposals had been made for ameliorating the condition of the poor, but none of them, especially that one associated with his name, deserved to be treated in the particular way adopted in the paper, by entirely unnecessary introduction there for the purpose, not of argument, but of condemnation. For his part he did not think there ought to be any "resting place" in these matters, but the more facilities there were given day by day to thrifty people to practise thrift, and to unthrifty people to become provided, the better it would be for the country at large. He did not see why the misfortune of a man's birth, even were he born—

"Ditch-delivered, of a drab,"

should prevent him becoming at last an independent man; and he saw no particular object in throwing gratuitous odium on any scheme. It was merely an assumption to say that "the scheme itself will be birth-strangled," and he and many others held a different opinion. He had addressed two hundred and fifty public meetings on this subject, at which every class, from the lowest labourers to the highest in the land, had attended, and only on one occasion had he met with an adverse vote, and that was when a disturbance was created by political agitators. All existing aids to thrift touched on by the reader of the paper touched *only those people who are naturally thrifty*, but his own suggestions would touch the wastefulness of the wasteful, and he did not know why, either philanthropically, historically, or politically, the scheme should be regarded as bad or wrong in itself. There was another statement in the paper which required proof, namely, that, "As its promoters have never taken the trouble to show that they understand the most elementary conditions of its success, it is not worth while to waste the time of this Society upon it." He challenged Mr. Brabrook to prove that statement. If he would do so either in discussion, or in a public review, or in a paper specially written for the purpose, he (the Rev. Canon Blackley) would be very happy to answer it.

Mr. A. H. Bailey said the speech just delivered was very interesting, but it seemed to be a little apart from the main subject of the paper. Having had some experience of and insight into the financial operations of friendly societies, he could not resist a smile at the magniloquent French eulogium on the Act of 1875. The State might have done one of two things: it might not have interfered at all, or it might have given the societies the

assistance which they really wanted; but it had done neither the one nor the other. It appeared to confer seventeen privileges, the value of which is not very clear, but in return it required many things, the most important being the quinquennial valuation. To ask a village society, of say 200 members, to supply such a valuation, and to show how its sickness experience agreed with that of the table adopted, was equal to asking them to write an essay in Chinese. If the State thought fit to interfere at all with these societies, it should have given them its assistance in the matter of the valuation. There were 6,000 such societies, and he ventured to say there is not sufficient skilled labour available in this country to make all the valuations, and to his own knowledge some of them had been made by most ignorant men. The great object of these societies was to make provision for sickness, but sickness, from a friendly society point of view, meant inability to perform ordinary occupation, and therefore varied according to the nature of the work. It was simply impossible for a bricklayer's labourer suffering from rheumatism to carry a hod of bricks up a ladder, but a man whose occupation was indoors might work when so suffering. There was also such a thing as malingering, so that altogether there were many difficulties to be encountered in determining the rates for and estimating the liability for such risks. It had occurred to him that it would be a great improvement if these societies could be made less ambitious and be restricted to sickness benefit. He thought that no valuations should be required, and that the finance should be like that of accident companies, fire insurance companies, &c., the contributions varying according to the age of the member, not necessarily for every year. The contributions so raised should be sufficient to meet the claims and expenses of the year, and if they were insufficient it would be easy to increase them. Other institutions would meet the death payments, and deferred annuities should not be attempted at all. If they were so restricted in their operations, the working of them would be tolerably easy, and the position of the members would be materially improved. The sum of 166 million pounds mentioned in the paper included 48 million pounds for incorporated building societies; but part of that represented the amount borrowed, which could hardly be regarded as thrift. Then again, members of friendly societies and contributors to savings banks were different classes, a large portion of the 94 million pounds of savings banks deposits being for the children of the upper and middle classes. Mr. Brabrook had therefore added together some very incongruous items in order to make up the 166 million pounds. He had some reason to believe that the remarkable growth of the last three or four years in savings banks deposits was due to this: that the $2\frac{1}{2}$ per cent. interest given by these institutions exceeded what had of late been obtainable from joint stock banks.

Mr. Jas. S. Randall said there were one or two points in connection with friendly societies which, in his opinion, were very capable of improvement. With regard to registration, he had been very much struck by a statement made by the manager of the

Manchester Unity of Odd Fellows about four years ago, that it cost that society 20,000*l.* to get out the figures required from them as a registered society. In connection with this he could not help remembering what Lord Nelson said three years since at the annual meeting of the Wilts Friendly Society, that registration was no evidence of security. If the money of the members was spent in that way the outlay ought to be made beneficial to them. It would be a considerable protection to members of friendly societies if it were made penal for any new society to receive contributions until the tables of payment had been certified by a Government actuary as calculated to secure the benefits promised. This would not secure safety, but it would make safety possible. Even under this safeguard a reckless management might preclude safety. A Bill to that effect passed the Lords and reached the House of Commons, but the managers of friendly societies used their influence with the members of the House of Commons, and prevented its passing. The Bill, however, in no way affected existing societies; it was limited to new societies, and could not have injured any sound friendly society, though it would have checked the further creation of fraudulent societies. He was desirous to point out that the power which the managers so exercised is derived from the members they represent. A friendly society ought to exist for the benefit of the members, and the influence of a society ought to be used for the benefit of the members, not for the benefit of the managers. There were two risks attending membership of friendly societies: the first was with regard to the stability of the society, and seeing that only about one in six was sound, this was no inconsiderable risk. But beyond that, let the society be ever so safe, there was the risk of lapse; and hence the provident working man lived in daily danger that despite all his industry and self-denial he may be a pauper at last. Circumstances might arise to prevent his keeping up his payments, and in that case all he had paid was lost to him. He would like Mr. Brabrook to say something on these points.

Mr. W. Leigh Bernard said he regretted very much that Mr. Brabrook had not referred at greater length to the working of the Industrial and Provident Societies Act of 1876. It appeared to him that the legislature in enacting the Act of 1876 had left open a great door to fraud, especially in respect of the mode of settling disputes and banking facilities, and he would have been glad to hear what was the experience of the Assistant Registrar on those points. The Act gave a power to industrial and provident societies to do banking business, and in so doing had left open a door to grievous imposition in many cases. He was aware that the chief registrar, with the consent of the treasury, might close a society if it was shown that it existed for *an illegal purpose*, but these regulations were so hedged round by different technicalities, and there were so many things that could be done *legally*, although most immoral and contrary to the intentions of the framers of the Act, it was practically impossible for any person interested to take advantage of what was intended to be a safeguard. Every

opportunity should be given to allow improper dealings to be detected, and the members should not be handicapped by having to go through an expensive tedious process either in the county court or elsewhere. There was no provision in the Act requiring notice to be given of allotment of shares, and although the absence of such regulation is not conclusive, having regard to the decision of Lord Cairns in Pellatt's case (L.R. 2, c. 527), it was most important that such should be insisted on by the chief registrar in the case of societies allowed to do banking business, in the same manner as shares are allotted in a company registered under the Companies Acts, 1862 to 1883, as without such a safeguard being inserted in the rules, under the Industrial and Provident Societies Act any person might fraudulently apply for shares (especially guarantee shares, the issue of which should be abolished) in another person's name, and the latter might some day find that he was on the register, and have had no opportunity of taking the necessary steps to correct the fraud, and this is but one of many illustrations that might be given. The system by which unprincipled persons may league together and get one of themselves to audit the accounts, as is believed to be done, affords another door to fraud, which he thought the legislature ought to deal with by establishing a compulsory system of public audit. In conclusion, he thought that the banking facilities of such societies under the Act of 1876 should be entirely withdrawn.

Professor Foxwell said there was a very marked difference between co-operative societies in relation to this matter of thrift. The Civil Service Stores and other societies of that class were not in any respect institutions for the encouragement of thrift, they were simply large retail shops organised with a view to selling at the lowest possible prices. The practice of the Rochdale Store, on the other hand, was not to undersell other shops, but to charge the current price and accumulate the difference between that price and the price at which they could afford to sell, handing over that accumulation to the purchasers at the end of the year in a lump sum. In that way it acted as an encouragement to thrift. Could not the returns be given in such a way that it would be possible to discriminate between these two types of societies? With regard to confiscation of payments, at first sight it would seem to be the grossest possible injustice that a man who had subscribed for one half of his life should, when a defaulter in consequence of accident or misfortune, forfeit his claim to any future benefits, and receive no consideration for the value of the payments completed; but as far as he was able to judge, friendly societies did not take the strictly commercial view that was ordinarily taken. Where a member broke down through a misfortune not subject to his control, it was usual for the other members to subscribe to help him to carry on his payments. That might or might not be a satisfactory commercial arrangement, but it must be recognised, and it worked fairly well, putting a very strong pressure on a member to continue his payments. In a good friendly society a man of good character would not often find his subscription confis-

cated. As one who had supported Canon Blackley, while not agreeing entirely with all his proposals, he could not pass by the reference in the paper to the views with which Canon Blackley's name was associated. Whether his scheme in its present shape was regarded as practicable or not, he had devoted eight or ten years of unremitting labour to the question, and his views deserved to be treated with respect. It must be admitted that under the present constitution of society there was an intolerable uncertainty with regard to the condition of a large portion of the population. It was a simple fact that there were a large number of persons liable to be turned on the pavement to-morrow by events utterly outside their own control, and that was a matter with regard to which the State should concern itself in some way or other. For instance, greater facilities might be offered with regard to insurance. He disagreed with those who considered that insurance societies would always spring up to meet any demand. The figures given in the paper showed that since the institution of Government savings banks, the amount in savings banks had increased by the gross sum deposited in the Government banks, and it might be safely concluded that not one half of that amount would have been saved in the old banks. That was an example of what might be done by Government facilities and encouragement to individual action.

In reply to a request that he would refer to the Starr-Bowkett Building Societies, Mr. Foxwell stated that from all he had heard he believed they had been the means of encouraging a great deal of thrift, and they seemed to him to be the least injurious way in which chance could be brought in to encourage thrift. In a given locality a number of persons, say fifty, associated themselves together, paying a weekly or monthly subscription, and continuing to do so until a lump sum of, say 100*l.*, was accumulated. That amount was then, by means of a ballot, put at the disposal of one of the members for the purchase of a house. If he was not in a position to complete the purchase, he sold the use of the 100*l.* to another member, and then the society went on accumulating other sums until every member had purchased his house. One good thing about those societies appeared to be that they carried on their operations locally, and therefore under the eye and the criticism of their members. The scheme seemed to be ingenious, but he had never seen a complete presentation of its history and working.

Mr. A. H. Bailey thought Professor Foxwell could hardly be aware that those societies had been characterised by judges in very different language. They were purely gambling institutions, ignoring altogether the question of interest. The man who drew an advance in the first year was very well off, but if his turn did not arrive till the twentieth year he was very badly off indeed.*

* Professor Foxwell has requested to be allowed to add the following note:—
The simple fact is that the attraction of gambling for the interest is found to stimulate to the saving of the principal. There is direct evidence that this has been the effect in certain cases. The scheme is avowedly not based on the ordinary actuarial principles; but neither have the trades unions or other great

Mr. E. Vansittart Neale said it seemed to be imagined that there was a considerable amount of danger about the banking business of co-operative societies, but there were only three or four such societies which used the power at all, and these were almost entirely confined to the neighbourhood of London. According to the returns they had made they were very small societies, and really might be altogether eliminated. There was only one large society doing banking business in which the artizans were concerned, and that was the great wholesale society in Manchester, whose banking business was almost entirely confined to the accounts of societies, and was thoroughly legitimate. With regard to the security generally there was this protection, that no society registered under the industrial and provident societies Act could carry on banking business if it had any withdrawable share capital. All the share capital must be transferable only. No doubt the law required that companies should return the shares taken up, and the amount due upon them; but that was for the protection of the creditors. No one imagined that it was to protect people against being put on as shareholders without their consent; that was quite as possible in a company as in a society. There was therefore no special risk connected with this sort of banking business. There was only one large civil service society in England registered as an industrial and provident society; and in the report published by the congress of co-operative societies every year an analysis appeared of the registrar's returns in which that point was made clear. The retail societies were also there separated from the wholesale societies, and which was necessary in order to get at the actual business of the societies, otherwise, since the same goods were sold first by the wholesale to the retail societies, and then by these societies to their own members, the amount would be reckoned twice over. Co-operative societies afforded the first instance in which the masses of the people had taken into their own hands those transactions out of which the wealth of the country had arisen as a means of bettering their own position. Hence their great importance in comparison with the ordinary modes of saving.

Mr. Stephen Bourne said that as an old opponent of Canon Blackley's scheme, and one who had not seen occasion to think that his opposition had been wrong, he yet could not allow that it would be a waste of time for the Society to devote attention to the subject. The tables shown on p. 28 were of immense importance, but they were painful in the extreme, showing that so much thrift was thrown away by the investment of it in societies which could

successful movements always been based on such principles. If it is considered that in one form the element of chance enters into all insurance, and that we tolerate on grounds of general expediency gigantic and far more mischievous gambling on the stock and produce markets, it does not appear why the principle of these societies should be visited with such severe censure. That faults have occurred in the administration of particular societies may very well be true. I was not aware that it had been so, nor do I see that this would affect the general principle, with which only I was concerned.—H.S.F.

not ultimately repay all those who had made the savings. He could not endorse Mr. Brabrook's feeling of satisfaction as to the condition of friendly societies in general in the face of the alarming figures placed before them. Out of 6,600 societies there appeared a deficiency of 5 million pounds, while the whole accumulated funds of these same societies were under 80 million pounds. That meant either that there was expensive management which wasted the funds, or that the contributions were insufficient to provide for the deferred benefits, and therefore there must in the end be immense disappointment. This too was in spite of the fact that a large number of lapses took place. He had been requested to state that in the Oddfellows Society 25,000 subscribers every year failed to keep up their contributions. It was sometimes said that it was a mistake to find fault with societies on that account, because they would much rather that the payments were kept up; but that was not the point to be considered. Touting agencies prevailed throughout the country inducing people to join, of whom it was known that they would fail in their payments. The large amount derived from that source was positively distressing. Young members were often mulcted in very large payments in order to provide for the extravagant payments made to older members; and he had known many instances in which after a young man had been paying for many years the society broke up, and he lost all his money. He therefore thought more State supervision was wanted over those who were so liable to be deceived. Then there was this doubtful circumstance, that the value of money was lessening from time to time. The country had been living too much upon the accumulated money, and day by day the sources of legitimate investment were decreasing, so that a reduction of interest must be looked forward to. The position of friendly societies was one of very serious importance in a national point of view, and such efforts as those of Canon Blackley should not be despised, although they might not be regarded as quite practicable.

Mr. C. J. Radley thought that in Canon Blackley's scheme the system of compelling the whole population in order to catch the unthrifty portion, and the way in which economical principles had been disregarded in aiming at the magic 10*l.*, would justify all that had been said about it in the paper. Mr. Bailey would, if he had his way, undo all the good the State had done for friendly societies. He recommended that valuations should be done away with, and the reason he gave was rather a curious one, that village clubs were not capable of understanding the principles of actuarial science. He might have gone further and said that the members of town clubs did not at present fully understand them; but they were not called upon to do so. The remedy advocated was, "Let the members only pay enough to make the thing a going concern." That meant that while the liability was an increasing one, and with the vast bulk of the population the ability to earn decreased with increasing age, the contributions would have to be continually increased with age, while the ability to pay them grew less. The result would be that the young

members who least needed help would be able to pay their contributions, and the old ones who greatly needed it would not, for men of later age would be driven out of the societies from the impossibility of paying the amounts required of them. With regard to Lord Greville's Bill, the certification of a society's rates, unless the Government were prepared to go a great deal further, was a mockery and a sham. The show of security should not be given without the reality. It was worthy of notice that the Bill avowedly omitted the sharing clubs from its operations, and if it were passed he believed the result would be to give a large impetus to those clubs, so that the least thrifty sort of friendly society would be advantaged to the prevention of the formation of other and better descriptions. Mr. Randall said the Bill only applied to new societies, but if it were necessary that Government should superintend the rates of friendly societies at all, surely it was a very bad argument to say, "We will leave to the old societies a monopoly of unsoundness." The deficiencies shown in the valuations were not so alarming as might be imagined, because, as a rule, they were spread over the whole after life of the members, and an extra charge of a halfpenny or a penny a week, which would generally be sufficient to balance matters, would no doubt be readily agreed to if the great bulk of the members were convinced of its necessity. What was the matter with friendly societies was that they were paying too little for large benefits; the poor man was robbing himself, not being "plundered" as some would insinuate, and needed to be taught the necessity of paying a fair price for a fair benefit. He thought the registry office might easily compile a catechism of friendly society principles, which might be taught in elementary schools, and it would be a good thing if it were made compulsory that every member when he joined a society should be supplied with the last valuation balance sheet.

Mr. John Lloyd, J.P., thought the suggestion of the last speaker (Mr. Radley) a very valuable one, namely, that a manual of simple instruction in the advantages and value of saving money, and in the best modes of investing it, should be prepared and placed in the hands of the young in all our schools. But to do this was not to be expected of a Government department like that represented by Mr. Brabrook. His experience of Government offices during many years was that while they prepared admirable blue books and statistical papers, they were deficient in original suggestions for improvements. Therefore he could not hope to see Mr. Radley's valuable suggestions ever carried out in that quarter. There had been, however, considerable originality shown in the Post Office department, and he looked to that office for further proposals in the interests of the working classes. He (the speaker) regretted to say that the efforts in this direction of the late Postmaster-general had been much thwarted by the insurance companies and the banking interest. When it was proposed to increase the limit of either insurance, annuity, or deposit, they endeavoured to keep down that limit as low as possible, and more or less they had succeeded. He thought it was not right that the

capital classes should interfere in this manner and endeavour to lessen the chances of thrift prevailing throughout the land, and of the working classes securing an independence.

Mr. Thomas S. Beardsell said a great misapprehension prevailed with regard to the deficiencies of friendly societies. The deficiency was an actuarial one, divided into two portions; one arising from the loss of subscriptions, and the other the present value of a prospective deficiency, which would only arise if the present rates of contribution continued in the future. That aspect of the question had been entirely overlooked in pamphlets which had been written on the subject, and therefore the matter was really not so serious as it might otherwise appear to be. He apprehended that very few members of friendly societies would object to have the scale of contributions so arranged as to adjust them to the scale of benefits, but he thought there would be some difficulty in causing new members to pay extra contributions to make up for the actual deficiencies of the past. That would no doubt have to be made up by a levy on those who were members when the rates were adjusted. The objection which he felt to Canon Blackley's scheme did not apply to the object aimed at, but to the mode proposed, and in that respect what Mr. Brabrook had said was undoubtedly justified. The scheme itself was utterly impracticable and unjust, because it assumed that every one was equally able to pay the same contribution. Practically it would levy a poll tax on the whole community. With regard to industrial insurance societies, many of them could scarcely be called provident societies, when 50 per cent. of what was taken from the working classes went in management.

Mr. Brabrook, in reply, said he readily accepted Canon Blackley's challenge. With regard to the other matters that had been referred to in the discussion, as the hour was late, he would leave them to the consideration of the Fellows.

The President proposed a vote of thanks to the author of the paper. It was, he said, by the friction of opinion, and by the statistical investigation of facts, that conclusions would be arrived at for the benefit of our fellow creatures. If Canon Blackley would have the kindness to offer himself, he (the President) would be delighted to propose him as a member of the Society, and if he would favour them with a paper of a statistical character, expressing his opinion as borne out by facts and figures, it would be welcomed by the Council, and would probably lead to an interesting and profitable discussion.

MISCELLANEA.

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I.—*Financial and Commercial History of* 1884.

The following is taken from the Supplement to the *Statist* of 31st January, 1885, in continuation of similar extracts for previous years—commencing with the year 1878:—

"A year ago we introduced our remarks upon the Financial and Commercial History of 1883 in the following manner:—'The year 1883 has been a disappointing one in business. Writing a year ago, in our Review of the Financial and Commercial History of 1882, we anticipated a considerable amount of dulness during the year. At the same time, looking at the low prices and the length of the period in which they had been low, we were rather inclined to anticipate the possibility of some revival before the year was out, especially if the harvest should be good. What has now to be recorded is that the dulness has continued all through the year, and in many respects the aspect of business was less favourable at the end of 1883 than it was at the beginning. Prices, as a rule, are even lower than the low level at which they stood at the end of 1882; many serious failures and collapses have occurred, and there are indications of an approaching diminution in the amount of business such as hardly existed when we wrote a twelvemonth ago.' *Mutatis mutandis*, we could almost now say the same of 1884 as we said a year ago of 1883. Notwithstanding the low prices at the beginning of the year, which we then remarked upon as low compared with what they had been previously, there has been a still further fall during the twelve months of 1884. During the year likewise there has been no recovery from the steady depression which has now lasted about two years. At the end of the year not only were prices much lower than they were at the beginning, but the prospect of recovery seemed further off than ever. The extreme fall in prices

appears, in fact, to have taken the heart out of business men. The year 1884 has altogether been much worse for business than its predecessor, and the prospect at the end of the year was, and the prospect now still is, less cheerful than twelve months ago.

"*The Decline of Business.*

"One of the peculiarities of 1883 was that although it was spoken of as a year of depression—and undoubtedly there was depression—yet the falling-off of business as compared with the previous period was all but imperceptible, and in many directions there was indeed no falling-off at all, but an increase. Thus, in the foreign trade the diminution of the exports was very little in nominal amount, and was perhaps none at all in reality, allowing for the falling-off in prices; while in the imports there was a very considerable increase. Similarly, the railway traffics showed an increase all through the year; and in the cotton, woollen, and other trades, not excepting the iron trade, there was an enormous production. In 1884, however, there has been a more observable decline in the amount of business done. The railway traffics, for instance, have fallen off almost all through the year, the decline being at the rate of $1\frac{1}{3}$ per cent. According to the tables summarised in our tabular appendix, the traffic receipts of the 17 leading lines in the first half of the year amounted to 28,615,000*l.*, as compared with 28,843,000*l.* in the corresponding half of the previous year, a reduction of just under 1 per cent.; and in the second half of the year the receipts were 31,325,000*l.*, as compared with 31,920,000*l.* in the corresponding half of 1883, a reduction of $1\frac{7}{8}$ per cent. Similarly, the imports show the very large decline of 36,000,000*l.* upon a total of 390,000,000*l.*, the reduction amounting to 8·4 per cent. The decline in the exports of British and Irish produce is less, but it is nevertheless considerable, amounting to 6,872,000*l.* upon a total of 233,000,000*l.*, or 2·8 per cent. No doubt a large part of this decline, in the case of both imports and exports, is the result of the fall in prices, there being no corresponding decrease in the quantities of commodities moved. Still, there is some decline in business, and the fact is important in noting the characteristics of the year. Viewed along with the facts which we shall afterwards have to notice as to the falling-off in iron production, there can be no doubt that 1884 was distinctly more depressed than 1883, and that production and consumption on the whole were less by a small percentage, but still a sensible percentage—allowance in these matters being always made, we need hardly say, for the increase of population. There is also a small decline in the revenue for the calendar year, though not a very marked decline.

"As the result, there have, perhaps, been more complaints of small profits and of want of employment amongst workmen during the past year than there have been for many years previous. The fall of prices, perhaps, has especially affected capitalists by diminishing their profits. But whatever the cause, there has apparently been less surplus capital available for the employment of labour in new works than there has been for many years;

while capital has also been idle, because in many directions, particularly in shipbuilding, which is one of the most important modes of investing capital, there was no prospect of profitable employment. It has to be considered that the prosperity which returned in 1879 proved comparatively short-lived, so that no large profits were made by capitalists which could be drawn upon in subsequent years of depression.

"At the same time the diminution in the quantity of business has not been uniform. In the woollen trade more particularly business has been comparatively good, the home consumption of raw material having been higher last year than in any year since 1879, the amount being no less than 381 million lbs., as compared with 321 million lbs. in 1879. The consumption in the cotton trade and in the textile trades generally has also been very large. In the leather and other trades there has also been the same large production and consumption, while there has been no falling-off, but rather an increase, in the consumption of articles of general luxury, such as sugar and tea.

"*The Decline in Prices.*

"The conspicuous feature of the year, and the cause of its unprofitableness as far as wholesale merchants and manufacturers are concerned, has undoubtedly been the remarkable fall of prices which has taken place. Low as was the range of prices at the time when we wrote a year ago, the fall of the past year not only brought down that range of prices temporarily, but seems to have brought it down in a lasting manner, the low range having now continued for several months. We cannot do better than go over the list of articles in our tabular appendix.

"Beginning with iron, we find that Scotch pig iron warrants, which were 43*s.* 4*d.* in January last, have fallen to 42*s.* 3*d.* in December, the price of 41*s.* 2*d.* having been touched at the end of June, and even a somewhat lower figure than what appears in the table having been quoted. This price of 42*s.* 3*d.* in December compares with what we noticed as the very low price of 47*s.* 6*d.* in January, 1883. Similarly, Middlesbro' No. 3 pig iron, which was 42*s.* 6*d.* in January, 1883, and 37*s.* in January, 1884, was only 35*s.* 6*d.* in December. Staffordshire bars, which were 7*l.* 17*s.* 6*d.* in January, 1883, and 7*l.* 12*s.* 6*d.* in January, 1884, were only 6*l.* 10*s.* in December. Welsh bars (Wales), which were 5*l.* 17*s.* 6*d.* in January, 1883, and 5*l.* 6*s.* 3*d.* in January, 1884, in December last year were only 5*l.* 2*s.* 6*d.* Copper (Chili bars), which commenced in January, 1883, at 65*l.* per ton, had fallen to 56*l.* 12*s.* 6*d.* in January, 1884, and in December was only 48*l.* per ton. This last price, it is noticed in the trade circulars, is not only about 12 per cent. lower than the lowest price upon record previously, but 30 per cent. lower than the lowest price at which it used to be considered that the article could profitably be produced. Straits tin, which was 92*l.* 15*s.* per ton in January, 1883, and 84*l.* 12*s.* 6*d.* in January, 1884, in December was 75*l.* only, the price of 73*l.* 15*s.* having been touched in October. Tin plates, which were 21*s.* 6*d.* per box in January, 1883, and 21*s.* in January, 1884, in December

were 19*s.* only. Lead, which was 13*l.* 12*s.* 6*d.* per ton in January, 1883, and 12*l.* 7*s.* 6*d.* in January, 1884, was in December 11*l.* 6*s.* 3*d.* only, the price of 10*l.* 17*s.* 6*d.* having been touched in September. In coal, amongst the important metals and minerals, there is exceptionally hardly any change; but generally it may be said that there is at least a fall of 10 to 15 per cent. during the past year in these leading articles, and a fall of nearly 20 per cent.—in some cases of more than 20 per cent.—if we extend the comparison for two years.

"In chemicals there has been a steady fall for the year. Bleaching powder, from 10*s.* 7½*d.* per cwt. in January, fell to 7*s.* 10½*d.* in December; saltpetre, from 24*s.* 3*d.* in January, to 22*s.* 6*d.* in December; and soda, from 3*l.* 14*s.* per ton in January, to 2*l.* 15*s.* 9*d.* in December. In these cases, however, the fall to some extent has only been the loss of an advance which took place in the previous year, although the range is still comparatively low. In dyes and oils, particularly linseed oil and petroleum, there is also comparatively little change for the year, although the range of prices, it must be understood, is somewhat low. In other articles, however, there is a decided fall.

"Coming to textiles, we find the changes, as already stated, less marked. In cotton there has, in fact, been hardly any change of more than a fractional kind for nearly two years, the price commencing at 5$\frac{11}{16}$*d.* per lb. in January, 1883, and ending at 5$\frac{15}{16}$*d.* per lb. in December last, the highest price recorded in the interval being 6$\frac{3}{8}$*d.* in May, 1884, and the lowest price 5$\frac{7}{16}$*d.* in July, 1883, and October, 1884. The price of the yarn manufactured has also varied very little, beginning at 9$\frac{3}{4}$*d.* in January, 1883, and also ending at 9$\frac{3}{4}$*d.* in December last. In wool likewise there has been very little change, the prices of the different kinds of wool, as will be seen from the details in one of the trade reports subjoined, having varied in different directions. The range of prices in wool, it must be understood, is comparatively low. In jute, where a year ago some recovery had taken place from the extremely low prices which had ruled in 1883, that recovery being to 16*l.* 10*s.* per ton, there has since been a decided fall, the price at the close of the year being only 12*l.* 15*s.* per ton. In silk there has also been a somewhat heavy fall during the two years—namely, from 16*s.* 4½*d.* per lb. in January, 1883, to 15*s.* 3*d.* per lb. in January, 1884, and 13*s.* 3*d.* in December last.

"Turning next to the chief articles of food, we find that the fall has been very severe indeed. The *Gazette* average price of wheat, which was low in January, 1883, at 40*s.* 4*d.* per quarter, was only 38*s.* in January, 1884, and in December was 31*s.* 5*d.* only, even somewhat lower figures having been touched during the autumn months; good red English wheat, weighing 63 to 64 lbs. per bushel, has, in fact, been sold during the year at a price lower than the *Gazette* average—namely, at 29*s.* per quarter. Similarly, the price of red wheat per bushel in New York has fallen from $1·18 in January, 1883, to $1·5 in January, 1884, and 86 cents in December, the quotation of 83¾ cents being actually recorded in November. Maize in New York began at 71½ cents per bushel in 1883, and fell

to 60 cents in January, 1884, and 50 cents per bushel last November, recovering in December to 56 cents per bushel. In barley and oats the fall is somewhat less, but still there is a slight fall. In bacon there is a fall from 69*s.* per cwt. in January, 1883, to 67*s.* in January, 1884, and 63*s.* in December last. In coffee there is a fall from 77*s.* 6*d.* in January, 1883, and even higher figures during 1883, to 75*s.* in January, 1884, and 67*s.* 6*d.* in December last. In tea during the past year there is apparently a rise from $5\frac{1}{2}d.$ per lb. in January to 6*d.* in December, these prices being higher than those of 1883, but being still a comparatively low range of prices. In sugar the greatest decline has occurred, the decline being, in fact, almost unprecedented in regard to any article of produce. The price of good refining West India was 20*s.* per cwt. in January, 1883—a low price ; but in January, 1884, it was only 16*s.* to 16*s.* 6*d.* per cwt., while the price in December last was only 9*s.* 9*d.* to 10*s.* per cwt. Similarly, beetroot sugar has fallen from 19*s.* $4\frac{1}{2}d.$ per cwt. in January, 1883, to 10*s.* 3*d.* per cwt. in December last.

"The remarkable feature about these declines in price, it cannot be too often repeated, is the fact that they have occurred after a range of prices had already been established which was so low as to excite a great deal of remark. The result has been peculiarly disastrous to merchants and manufacturers. The close of 1883 witnessed some heavy failures in the grain trade, which have probably contributed to prevent any speculation in support of prices in the following year; and during 1884 there have been similar great failures in the sugar trade, particularly in Vienna, where the protected sugar industry seems to have all but completely collapsed, bringing with it not only the ruin of sugar factories, but threatening the collapse of more than one important financial institution. At home there have also been one or two important failures in the West India trade, and there has been something like a break-up of what is called the 'Petroleum Ring,' while other failures, we believe, in important trades are still anticipated as not unlikely to take place during the year. Indeed, looking at the fall of prices, it is hardly possible but that great changes in the real position of even the best firms must take place. Lately, one or two serious failures have been reported from the United States, particularly one of the largest firms in the iron trade, with liabilities of over a million sterling. It is perhaps remarkable, considering what the fall of prices has been, that there have been so few failures, and the only explanation can be that for some years past credit has been very much restricted. The losses caused by the fall of produce have consequently fallen very largely upon capitalists trading with their own resources, and who are impoverished by the losses no doubt, but who still do not suspend payment, because their borrowing has not been on a large scale. The impoverishment of capitalists has the further consequence, which we have already referred to, of diminishing the employment for labour, and thus adding to the depression itself; but it goes on to a large extent without panic or shock to credit, or a large crop of failures, such as might have been looked for if credit two or three years ago had been much extended.

"As was to be expected, and as has always happened lately in a time of dull trade, silver has also fallen in price, though not to any great extent, the lowest price touched having been 49½*d.* in September last. But for the fact that trade with the eastern countries, particularly with India, has greatly developed of late years, this tendency for silver to fall would probably have been much more marked than it has been.

"*The Iron Trade.*

"Actually the falling off of production has been most marked in the iron and shipbuilding trades. A few figures under this head may accordingly be stated specially. The production of iron in Great Britain during 1884, is estimated at 7,700,000 tons only, and this compares with a production of 8,490,000 tons in 1883, and 8,493,000 in 1882, these last having been the maximum amounts of production. The falling off amounts to between 8 and 9 per cent., and considering that it is a falling off from a maximum production, and that the highest amount in any previous year before 1881 was still only about 7,700,000 tons, it cannot be considered that the reduction is unusually serious, or beyond what has been very often experienced in the iron trade; indeed, looking at what the decline has been in previous periods, it may be considered not unlikely that before the present depression in the iron trade is at an end, the annual production may be still further restricted. That this is not improbable is shown by the fact that the number of furnaces in blast in the United Kingdom was much lower at the end of December than it had been for several years previous, and almost as low as in November, 1879. This number is 458, as compared with 472 in June, 1884; 510 in December, 1883; 545 in June, 1883; and 570 in June, 1882. Similarly, as regards shipbuilding, which is one of the chief sources of the demand in the iron trade, it appears that the annual outturn on the Clyde amounted in 1884 to 297,000 tons only, as compared with 416,000 in 1883; on the Tyne to 124,000 tons, compared with 216,000 tons; on the Wear to 99,000 tons, compared with 212,000 tons; on the Tees to 30,000 tons, compared with 79,000 tons; in the Hartlepools to 31,000 tons, compared with 67,000 tons; and so on in the smaller districts of the country generally, excepting Liverpool. More important still, it is stated that while the number of ships building at the end of 1884 was only 89, having a tonnage of 102,000 tons, the corresponding number at the end of 1883 was 132, with a tonnage of 194,000 tons; at the end of 1882, 209, with a tonnage of 326,000 tons; and at the end of 1881, 227, with a tonnage of 379,000 tons. The falling-off in shipbuilding would thus appear to have been continuous throughout the year, and the prospect at the beginning of the present year is very gloomy indeed. Lately there seem to have been more reports of orders for new ships, in consequence of the great reduction of prices which has occurred; but it does not appear that these orders have as yet altered materially the extent of employment in the shipbuilding districts. There is still evidently a great lack of employment.

"*The Money Market.*

"Before passing on to discuss the peculiarities of this depression, it has to be noticed that the course of the money market during the year has hardly been in accordance with what we should expect in a time of falling prices and general dulness. For some months in the year, down to the autumn in fact, the course of the market did correspond with what might have been expected. There was a steady fall in the value of money, until at the end of June the bank rate was reduced to 2 per cent., while the open market rate for three months' bank bills fell as low as $1\frac{1}{16}$ per cent. on July 9th. As the autumn advanced, however, the value of money rose, and in the course of October the bank-rate was advanced first to 3 and then to 4 per cent., and then early in November to 5 per cent., at which figure the rate has since been maintained, although the open market level has been somewhat below bank rate. At the same time, the state of the bank reserve was such as quite to justify these changes, the amount of the reserve at the beginning of November being only $9\frac{1}{2}$ millions sterling, as compared with 16 millions at the end of June, when the rate was reduced to 2 per cent. What would seem to have happened is, that in spite of comparatively strong cash reserves in the chief continental banks, and in spite of the unusually large surplus of assets over liabilities held by the New York banks all through the year, the money market of this country, as a whole, was very much pulled upon in various miscellaneous directions, the pull in no particular direction being of any magnitude. The Imperial Bank of Germany seems also to have been pulled upon in a similar manner. The fall to 2 per cent. had, in fact, been brought about mainly by the great dulness, and not by any large margin of actual cash; and the moment the margin was trenched upon, there was found to be no means of filling it up, while no other monetary centre, large as the cash apparently possessed by them was, had any real surplus to spare. The case of the surplus in New York appears to be especially peculiar in this respect. Writing a year ago, we anticipated, in consequence of the tendency of that surplus to accumulate, that probably in the course of the year money would come from America to this country. In point of fact, the cash has rather tended to go from this country to America, although the surplus in the New York banks increased from 3,885,000*l.* at the beginning of the year to 8,195,000*l.* at the end of the year, and now amounts to 10 415,000*l.* The reason, we believe, has been that, large as the surplus of the New York banks is, there has been no corresponding surplus in the country. The amount of gold held in the treasury against the greenbacks has, in fact, been about a minimum, the Government having been weakened as compared with its position some years ago. In other words, the large surplus in the New York banks has to some extent masked the real monetary situation of the country, where until now the real surplus has been smaller than this apparent one.

"The difficulty remains that the surplus all over the world, looking at what the dulness of trade has been, is so small. The

explanation, we believe, can only be what has frequently been referred to on former occasions in the *Statist*—namely, the real scarcity of gold which has existed as compared with the period of abundance ten or fifteen years ago. But for the fall of prices which has taken place, the nominal amount of deposits in banks to permit the same business to be done that has been done—that is, to permit the same movement in the quantities of commodities—must have been far larger than it has been; and if it had been larger, it would have been necessary also for the banks to keep much larger reserves than they have kept. The adjustment has been made by prices falling and by deposits being kept low, so as to correspond to the amount of cash which the banks have been able to handle. As a result, the banks have had a margin, and in times of dulness the rate of money has fallen as it would have been expected to fall; but at the least appearance of the margin being trenched upon, the rate again rises. Accordingly, prices are kept low, and the appearance of depression is aggravated by these low prices.

"*The Prospect of* 1885.

"With regard to the prospect for the current year, a great deal of what we said a year ago may also be repeated. What we said then was:—'It is not difficult to anticipate that the beginning of the year 1884 will not be very satisfactory. It begins, in fact, in the midst of serious languor and depression, and these influences, it is hardly possible to doubt, will continue to operate for some time to come. Changes in such matters are very slow; in fact, the depression has come about so slowly, and the fall of prices has been so steady and prolonged, that it becomes impossible to anticipate that there will be any sudden recovery very soon. Apparently, business has to go through a more difficult time than it has had to go through for some years, and for the moment we cannot say that there is a sign of change for the better.' *Mutatis mutandis*, we may now say of the beginning of 1885 what we said of the beginning of 1884. As we said a year ago also, the most puzzling circumstance is the extreme lowness of prices; and of course, as the range of prices is much lower than it was a year ago, when things seemed, according to former experience, to have been approaching the bottom, the perplexity of the situation is increased. What is to be feared is that the fall of prices having hit so many capitalists severely, no elasticity is left for a quick recovery, and those concerned must wait patiently and look about them before they can venture on any strong speculation for the rise, which will, no doubt, be the beginning of any recovery. Because, however, recovery has been so long deferred, we are disposed to think that the chances of the recovery taking place in the course of the current year are much greater than they appeared to be at the beginning of last year with regard to the year which had then commenced. The fall in commodities has been so great, that it must have provided for any adjustment that may be necessary to the scarcity of gold at the present time; so that there is now an undoubted margin for improvement. The restriction of credit for

so long a period must also have had the effect of bringing almost all business, not only in this country, but abroad, to a very sound basis, a large part of it being carried on without borrowed money at all, and from hand to mouth. Some of the circumstances, also, which have been unfavourable for the wholesale merchant and manufacturer have been conducive to the prosperity of the retailer and of the working classes. The retailer has been able to obtain his stocks at very low prices, and it has not been necessary for him to give the whole advantage to the consumer, although the consumer has had part of the advantage. Both classes, therefore, for two years past have been deriving benefit from the circumstances which have been so unfavourable to the wholesale merchant and manufacturer, and undoubtedly large savings have been made in certain directions. If the working classes were more thrifty than they are, it is certain that the continuance of a state of circumstances like that of the last two years would have been preparing the way for a very rapid recovery. Still, considerable savings have been made, and these will undoubtedly tell in various ways in the direction of improvement. The masses having more to spend, if they do not save, will be able to purchase additional quantities of commodities, and to some extent the improvement in the woollen trade is due to the increased purchases of the masses. The savings of the lower middle classes must also in some form or other in time have an effect upon the money market and upon the markets for securities generally; and when a surplus begins to press upon these markets, improvement will not be long deferred. A very little improvement, it must be remembered also, will suffice to give heart to the capitalist and merchant, who will suddenly find that their stocks of commodities and securities on every side have improved in value, and will feel themselves richer than they have done for several years. The most doubtful symptom of all, perhaps, is that, in spite of the great depression which has taken place, wages have not yet been completely adjusted, as prices of commodities have been, to the greater value of gold which has been brought about by its scarcity. That such a fall of wages is very likely to take place, we cannot but believe; and if there had been a more general fall of wages in the leading trades during the last two years than there has been, we should be more confident than we are now of an early recovery. A great deal, of course, will also depend upon the harvest. The harvest of last year was a good one, but still not sufficiently good enough to bring all the results of improvement which might have been expected; while for the farming interest those results have been neutralised disastrously by the fall of prices. A good harvest at home, coupled with prices which would still be low, although a good deal higher than they are now, is what is wanted to bring about a general improvement in the country trade, which would contribute to the improvement which we anticipate from the circumstances of the small retailer and the consumer. There is still necessary, however, a good deal of caution in business, owing to the danger of failures which continues, notwithstanding the great restriction of credit. It is not well to be too sanguine; and if improvement should come during the course of the present

year, people will be all the more ready for it if they hold their hands now, and have means available for taking advantage of the turn of the tide when it comes."

The Index to the Supplement from which the foregoing is taken is appended as usual:—

Financial and Commercial History of 1884.

Introduction—The Decline of Business—The Decline in Prices—The Iron Trade—The Money Market—The Prospect of 1885.

Pauperism.

Extracts from Trade Circulars.

(*Illustrated with Diagrams showing the Course of Prices, &c.*)

The Iron Trade—Engineering—Shipbuilding—Freights—Copper—Tin—Lead—Spelter—Chemicals—Coal—Tallow—Petroleum—Turpentine—Leather—Wood. *Textiles, &c.*, Cotton—Wool—Silk—Linen—Jute—Hemp. *Food, &c.*, the Harvest of 1884—Rice—Sugar—Tea—Coffee. Wines and Spirits—Indigo.

Tabular Appendix.

Bank Returns—

Bank of England—Bank of France—Imperial Bank of Germany—Austrian National Bank—Bank of the Netherlands—Associated New York Banks.

Foreign Market Rates of Discount—Exchanges and Bullion.

Clearing House Returns—

London Bankers' Clearing House Returns—Stock Exchange Settling Days.

Savings Banks—Failures of 1884—Bills of Sale—Bullion—Allotments of Indian Council Bills in 1884—Government Drafts and Telegraphic Transfers—Indian Bank Rates—Public Revenue—Income Tax—Stock Exchange Securities—Prices of Wholesale Commodities.

Imports and Exports of the United Kingdom.

II.—*Emigration in the Nineteenth Century. By* Emile Levasseur. (*Translated from "l'Economiste Français," 27th September and 4th October*, 1884.)

The modern period of colonisation may be said to date from the treaties of 1815, and its successive stages are marked by important political events, and by the development of industrial enterprise which has had so powerful an effect in modifying the commercial currents of the world. Among the chief factors which have been instrumental in determining the volume of emigration generally, may be enumerated the following:—The recognition of the Republics of Central and South America by England, which was the first country to benefit by the opening up of new commercial centres

for her produce and manufactures; the policy of the Restoration which caused a vast number of Frenchmen to leave their native homes and settle in foreign lands; the rapid strides which have been made in the improvement and perfection of steam navigation, and the extension of the railway system, by which the conditions of transport have undergone so complete a change, and which have brought about, in the movement of goods and passengers, as well as in the conditions of wealth, a more general revolution than was even effected in the sixteenth century by the conquest of America; the discovery in 1848 and 1850 of the gold mines of California and Australia; the abolition of slavery in European colonies, inaugurated by England in 1834, and completed by France in 1848, this nation being the first to proclaim the principles of freedom in 1793, and followed by the United States in 1863 and Brazil in 1871; the opening of a certain number of ports in China and Japan to European trade, and the construction of the Suez Canal, the effect of which was to considerably augment the volume of European and American trade with the East, and the cause indirectly of greatly facilitating Chinese emigration; and lastly the complete suppression of the colonial pact, first by England and later by France, and the substitution of free trade for protection, a change which has been of substantial advantage to the commerce of both countries.

It would appear that during this period, which may be characterised as the *commercial period*, though the term *voluntary emigration* is equally applicable to it, everything which had been favourable to the expansion of international trade also exercised a favourable influence on colonisation. In past ages the impulse given to emigration generally came from the mother country; it was there that arrangements were made for supplying the colonial possessions with inhabitants as well as with goods, either by purchasing blacks from Africa, or by compelling shipping companies in consideration of various concessions being granted to them to carry on board their vessels on every voyage they made, a certain number of colonists—a system formerly much in vogue in France. In the nineteenth century however a totally different order of things appears to prevail, and the mother country does not play the same *rôle* in emigration as formerly. At the present day it is left to agencies and societies of a private nature, and more or less of a commercial or religious character, to take that part in promoting and fostering emigration which had hitherto fallen to the mother country. It appears to be the exception for European Governments to populate their own colonial possessions as France at one time colonised Algeria, and the onus is now laid upon the colonies. It is they who, recognising that to the wholesome and prosperous progress of a colony in a new country the constant accession of new settlers is indispensable, find themselves forced to take such measures as appear to them to be the best, and either parcel out their land, offer it for sale at very reduced prices, or even make free grants and take every advantage of publicity to attract immigrants. The latter system would appear to be the most logical, since it is essentially the colony which is materially

benefited by immigration, and it should undoubtedly be encouraged, more especially as the present system of voluntary emigration is characterised by many features which differed from those distinguishing the colonisation of past ages. There are many influences at work which determine the volume of voluntary emigration, and among others may be enumerated the following:—(1) over population, arising from an excessive birth-rate; (2) insufficiency of the means of subsistence in the mother country, which is the natural result of an excess of population, and one which exercises a powerful influence in promoting the growth of emigration, as it compels many to leave their native soil and seek elsewhere the means of existence; (3) the prospect of ameliorating their position, which is a powerful inducement to many to emigrate; (4) political considerations, which frequently render a residence in their native country impossible to a certain section of society; (5) the increased facilities for communication, and the multiplicity of the relations existing between the countries of emigration and immigration; and (6) the influence exercised by public institutions and private agencies which in the country of origin contribute to stimulate the flow of emigration and in the country of destination to attract it.

The two first of these causes affect the poorer classes of the community, and act with greater force in times of crisis and depression than in times of prosperity, and the third is one which more nearly affects the middle classes of society, and only then appears to operate upon a relatively limited number of individuals, as it is obvious that those who have been successful in acquiring a status in their own country, no matter how humble that position may be, are not often disposed to relinquish it, and are therefore less likely to resort to emigration than those who have neither established position nor prospects, and have nothing to lose and everything to gain by leaving their own country and seeking their fortunes elsewhere. The fourth cause is frequently attended by violence and moral suffering, but it has in times past been a most powerful factor in promoting civilisation, as it peopled new lands with a race of men endowed with those intellectual and moral qualities that are essential to the establishment of a well regulated society, and who carried with them to their new home a knowledge of agriculture and other useful arts superior to what can grow up spontaneously in the course of many centuries among savage and barbarous nations. They carried with them also the habit of subordination, some notions of a regular form of government, of the system of laws that support it, and they naturally established something of the same kind in a new settlement. And taking now the last cause, that is the establishment of public institutions and private agencies, we find that it is of very material assistance in regulating and augmenting the current of emigration, and it may even be said of exercising a moral influence over it.

The emigration of the present day is a far more important fact than the colonization of the past three centuries, and statistics show us how largely it has been influenced by the increased facility in the means of communication. As an example of this let us take

the case of the United Kingdom, where from the various ports of the Kingdom a constant stream of emigration, English, Scotch, and Irish, flows towards remote quarters of the globe. Statistical returns have been prepared showing the movement of this current year by year, the year 1815 being the first for which any reliable information appears to have been available. A reference to the following tabular statement will show the number of emigrants leaving the United Kingdom in each of the quinquennial periods comprised between the years 1815 and 1883 :—

Periods.	Number of Emigrants.	Periods.	Number of Emigrants.
1815–19	97,799	1850–54	1,638,945
'20–24	97,548	'55–59	800,640
'25–29	121,084	'60–64	774,111
'30–34	381,596	'65–69	1,064,988
'35–39	287,538	'70–74	1,356,214
'40–44	465,577	'75–79	796,828
'45–49	1,029,209	'80–83 (four years)	1,535,353

An examination of the returns of emigration at the ports of Hamburg, Bremen, and Stettin, and at the Norwegian ports, exhibit the same tendency to a marked increase, as will be seen by the following tabular statement, showing the movement of emigration at the various German ports, without distinction of nationality, for each quinquennial period from the year 1847 :—

Periods.	Emigrants.	Periods.	Emigrants.
1847–49	112,091	1865–69	638,362
'50–54	385,849	'70–74	544,998
'55–59	272,165	'75–79	247,133
'60–64	209,326	'80–82	624,533

The emigration to America from Norwegian ports was as follows :—

Periods.	Emigrants.	Periods.	Emigrants.
1836–45	6,200	1865–69	63,647
'46–54	18,670	'70–74	54,487
'55–59	15,580	'75–79	23,920
'60–64	21,450	'80–82*	74,792

The director of the Italian Statistical Bureau, who has succeeded in making his department one of the most useful and important of the statistical bureaux of Europe, has lately produced a most valuable work dealing exhaustively with the question of the movement of emigration in the principal European countries. Although the list of countries enumerated in this volume is somewhat incomplete, and the information given, certainly as regards the majority of the countries, only refers to *officially recorded* emigration, yet a comparison of the total shows very clearly in spite of some trifling fluctuations, how very marked is the tendency to

* The figures for this period represent the whole of the emigration from Norwegian ports, but it may be taken that nine-tenths of the emigrants sailed for America.

an increase in the numbers. A reference to the following table will show the number of emigrants who, according to M. Bodio, left those countries in which official records of emigration are kept:—

Years.	Emigrants Leaving for non-European Countries.	Countries of Origin.
1853.....	289,000	United Kingdom, Norway, Austria
'55.....	155,000	United Kingdom, Norway, Austria
'60.....	109,000	United Kingdom, Norway, Austria, France
'65.....	186,000	United Kingdom, Norway, Austria, France
'70.....	250,000	United Kingdom, Norway, Austria, France, Switzerland, Sweden, Denmark
'75.....	212,000	United Kingdom, Norway, Austria, France, Switzerland, Sweden, Denmark, Germany
'80.....	471,000	United Kingdom, Norway, Austria, France, Switzerland, Sweden, Denmark, Germany, Italy
'82.....	591,993	United Kingdom, Norway, Switzerland, Denmark, Germany, Italy

It will be observed that the total of 591,993 emigrants for the year 1882, as furnished by six countries only, is very much below the actual number of Europeans who in that year left their native homes to settle in foreign lands, for we find on referring to the returns of the United States' Statistical Bureau that 603,006 immigrants were recorded in that country alone as coming from

Europe during the year 1882, and similar returns for the Argentine Republic show a total of 59,843 immigrants; while in the Australian colonies, 157,128 emigrants landed during the year 1880. We find, therefore, that excluding Canada and Uruguay, whose immigrants may be considered as being embraced in the total immigration into the United States and the Argentine Republic, and also leaving out of the question Brazil, whose immigration is greatly on the increase, we have an aggregate of 820,000 persons who left Europe to settle in the United States and Australia. And again, the fact must not be lost sight of, that the total of 591,993 shown in the above tabular statement, is exclusive of all emigration from France, where there is no regular or established system of registering the number of persons leaving the country; and that this emigration must be considerable, there can be no question, as it appears that during the year 1882 nearly 8,000 persons of French nationality landed in the United States and La Plata alone. It is evident, moreover, that this general movement of emigration would assume much vaster proportions if the migrations from one country to another in central Europe were taken into account, as in examining the whole question of emigration in its entirety, we ought first to consider the migration to the interior of each country, then the migration from one country to another in Europe, the emigration from Europe to other quarters of the world, and lastly the emigration which takes place from extra European countries. In this review, however, we can do no more than carry our inquiries over the question of European emigration to non-European countries.

The following table, which has been taken from returns published by the United States and the Argentine Republic Statistical Bureaux, shows the extent of immigration into these countries during the year 1882, and it will be seen on comparing the statement with the table given above, compiled from the returns of the Italian Statistical Bureau, that the actual number of persons there given as representing the total emigration for the same year is considerably underestimated:—

Countries of Origin.	Immigration into the United States.	Immigration into the Argentine Republic.
	No. of Immigrants.	No. of Immigrants.
Germany	232,269	1,128
Austria-Hungary	29,917	672
Belgium	1,129	183
Denmark	12,769	11
Spain and Portugal	417	5,628
France	5,560	3,382
United Kingdom	161,428	826
Italy	29,437	29,587
Netherlands	7,880	5
Russia	22,451	26
Sweden Norway	87,610	—
Switzerland	11,839	943

If we examine the sources from which this constantly increasing stream of European emigration flows, we are enabled to form an approximate idea of the powerful causes which operate in influencing so vast a number to abandon their habitations and seek their fortunes in foreign lands. And the following return, which has been compiled from the official statistics of the various countries, will throw considerable light upon this question:—

Years.	United Kingdom.	Norway.	Austria.	France.	Switzerland.	Sweden.
	No.	No.	No.	No.	No.	No.
1853	278,129	6,050	4,648	No returns	No returns	No returns
'55	150,023	1,600	4,005	,,	,,	,,
'60	95,989	1,900	2,032	9,532	,,	,,
'65	174,891	4,000	2,954	4,489	,,	,,
'70	202,511	14,830	5,920	4,845	3,494	15,568
'75	140,675	4,355	10,012	9,418	1,772	3,689
'80	227,542	20,212	10,145	—	7,255	36,398
'82	279,366	28,804	—	—	—	45,992

Years.	Denmark.	Germany.	Italy.	Netherlands.	Portugal.	Russia.
	No.	No.	No.	No.	No.	No.
1853	No returns	No returns	No returns	No returns	No returns	No returns
'55	,,	,,	,,	,,	,,	,,
'60	,,	,,	,,	,,	,,	,,
'65	,,	,,	,,	,,	,,	,,
'70	3,525	75,912	,,	,,	17,284	,,
'75	2,088	30,773	,,	2,130	15,440	6,752
'80	5,658	106,190	35,677	11,785	12,597	5,162
'82	7,958*	193,869	67,632	34,321	14,637*	—

* These figures refer to the year 1881.

The following tabular statement will show the extent of the immigration into the United States, Canada, the Argentine Republic, Brazil, Australia, and New Zealand, the same years being taken as were given in the previous tables:—

Years.	United States.	Canada.	Argentine Republic.	Brazil.	Australia and New Zealand.
	No.	No.	No.	No.	No.
1853	368,645	36,698	—	—	63,217
'55	200,877	21,134	—	—	55,402
'60	153,640	10,322	5,656	—	24,783
'65	248,120	18,623	11,167	5,952	40,115
'70	378,796	24,706	60,815	9,123	18,397
'75	191,231	27,382	47,364	—	134,091
'80	593,703	—	50,859	22,859	157,128
'82	730,349	—	67,000	—	—

For many years the United Kingdom has not only been a country from which immense supplies both of men and mer-

chandise have been drawn to provide for the wants of non-European countries, but it may be considered as the greatest emigration depôt of the world. It has a dense population which is rapidly increasing, and is therefore well able to withstand the drain of a considerable portion of her virile population; as regards her trade, shipping, and colonial possessions, her commercial relations are more extended than those of any other country. Her dominions extend over an area of 13 million square miles, and her sovereignty is exercised over 300 million subjects; thus it must at once be apparent that England is well able to spare a considerable number of her working population, and her emigrants carry with them to their new homes their language, national customs, and spirit of social organisation, thus benefiting to a very considerable extent the country in which they have decided to establish themselves.

It was only in the year 1853 that the English emigration statistics for the first time distinguished the nationality of emigrants, that is to say the proportion coming from England, Scotland, and Ireland. During this year we find that the total emigration, which consisted of 278,129 persons, was composed as follows: English 62,915, Scotch 22,605, and Irish 192,609; while in 1882 the total number of emigrants amounted to 279,366, made up of 162,992 English, 32,242 Scotch, and 84,132 Irish, and the annual emigration has never during the last thirty years fallen below 95,000. The numbers have risen each time that there is a period of depression; for example, the bad harvests in Ireland in 1854 and 1855, and the industrial and commercial crisis of 1857, impelled many to resort to emigration, and on this point it may be observed that a period of inflation and prosperity in the country of immigration exercises a marked influence over the number of emigrants to that country, there being immediately a very rapid increase. As a case in point we may refer to the vast influx of alien passengers into the United States at the close of the war of Secession.

Germany also, as well as England, has a population both numerous and prolific, though the stream of emigration flowed at first more slowly from its shores than was found to be the case in England, one reason for this phenomenon being that she had not the same facilities of communication with the new world; but with the development of steam navigation, and the extension of the railway system, this volume of emigration rapidly assumed gigantic dimensions, until at the present day we find the Germans overrunning the new world as of old the hordes of barbarians overwhelmed the Roman Empire. The movement extends to the north and the east of Europe. Scandinavians, and particularly the Norwegians, familiar with the sea as the English, and as poor as the peasants in certain districts of Germany, Poles, Hungarians, and even Russians, whose emigration has been greatly augmented by the emancipation of the serfs, generally set out for America, which they look upon as an El Dorado. In Austria and Hungary the returns of emigration show a considerable increase during the last twenty years, and Holland, who sends her merchants and Government officials to the East Indies, and Belgium, who possessing no

colonies of her own, yet is enabled to carry on through the port of Antwerp a very extensive maritime trade, also contribute their quota to swell the volume of European emigration, although the part taken by these two countries is not of any great importance, and as regards the latter the immigration into the country amply compensates for the migration from it.

France, which is a densely populated country, ought to count for far more than she does in this movement of European emigration; but the French as a race are not infected with the eagerness of change, in fact there appears to be a rooted antipathy on their part to expatriation. On the question of emigration a Frenchman is apt to observe that he finds no inducement held out to him to leave his native country, as the conditions of life are most favourable to him there, and he is not disposed to leave his home and seek in foreign lands what is so easy to obtain in his own country. He does not object to an occasional migration from town to country, but he is altogether averse to settling in lands where the manners and customs are generally so entirely different to those to which he has always been accustomed, and where the language spoken is totally unknown to him. France may be considered as the country rather of immigration than of emigration, for two reasons, the first being that the birth-rate is exceedingly low, and the second that wealth is relatively abundant. The question then arises, is this condition of things to be regarded as an evil or a benefit to the country at large, though this is a subject to which we can do no more than merely refer, as time and space will not permit of our exhaustively discussing it. Though the fact remains that French emigration is undoubtedly very limited in extent, it is made to appear even more so than it really is by reason of the fact that there is an absence of any official publications giving any information as to the actual number of persons leaving the country to settle abroad. It is only by reference to foreign statistical data that we learn that during the year 1882 8,000 French emigrants landed in the United States and La Plata, and although we are told in the returns of the census of 1881 that 227,323 persons of French nationality were established in Algeria, including 38,929 belonging to the naval and military forces, yet we are left in total ignorance as to the average annual emigration; it has however been estimated at about 5,000 persons; and this estimate would appear to be approximately correct, as we find by the census returns of 1876 that 194,772 persons of French nationality, exclusive of naturalised French subjects, were established in Algeria. Comparing this number with the returns for 1881, we find an increase of 32,551, or an annual average of 6,510, and the excess of births over deaths being less than 1,000, (40,191 in the period comprised between 1876 and 1881), it results that the colony must have benefited by immigration to the extent of 5,500 persons annually, and this of course must be understood as including the augmentation of the military forces.

Spain and Portugal, in spite of their colonial possessions and the relations which they maintain with foreign Powers, only furnish a very small contingent to swell the volume of European emigra-

tion. In southern Europe, Italy is the only country of any considerable importance as regards emigration, and there has been for many years past a vast and constantly increasing stream from her shores to Africa or South America. Since Italy has become one of the chief Powers of Europe, a greater stimulus has been given to emigration, as in 1882 we find that the number of Italians who left their country exceeded 160,000, more than half of whom sailed for countries out of Europe. The Italian Government commenced to view this excessive migration with some apprehension when they discovered, from a comparison of the census returns of 1871 and 1881, that while in the former year there were approximately 476,000 Italians resident out of Italy, in the latter the number had more than doubled. At the present day the rage of emigration is such that every year a swarm of more than half-a-million persons leave Europe, and through the exodus, countries hitherto but little known and uncultivated have become populated and developed, and this flow of emigration, far from being immaterial in its effects as some assert, has influenced in a very marked degree the manners, customs, habits, religion, and even language of the various countries to which it has been directed.

In Oceania at the present day there is almost a rivalry between the white and the yellow races. The Chinese, a race of people hardy, sober, industrious, and prolific, who are inured to extremes of heat and cold, and are equally at home in the severe climate of North China and the warmth of Canton, have caused their influence to be felt both economically and politically on the eastern border of Asia, in the Malayan Archipelago, and on the heights of the grand central plateau of Asia. It was owing to the combined action of Europe and America that the ports of China and Japan were thrown open to trade, and although these nations were the first to benefit materially by the establishment of new markets for their products and industries, the Japanese and Chinese also gained considerably by their action. It was not long before the former attempted to remodel their social constitution on a European basis, and the latter first on the European steam vessels leaving their own ports, and later on their own steamers, shipped a considerable number of their redundant and starving population to Oceania. Chinese immigration, however, has not always been well received, for while at Saigon, Singapore, Batavia, the Malayan Archipelago, and at Lima they were enabled with but little difficulty to establish themselves either in service or in trade, positions which no one in the tropical zone appeared to dispute their right to hold, it was very different in California and Australia, where they had to contend against the opposition of the whites. In these countries it became in fact a war of races. Contractors and large employers of labour were disposed to regard their immigration very favourably, as the Chinese are not only good workmen, but they offer their labour at a very cheap rate, and for this reason European and American workmen became violently opposed to them. They viewed with the greatest apprehension the introduction of rivals who offered their labour at a price considerably below the market value, and thereby caused a fall in

wages, and they endeavoured by all the means at their disposal, in many cases resorting to actual violence, to discourage Chinese immigration. This immigration certainly labours under one serious disadvantage; it is composed almost exclusively of males, and can never become productive of good results as far as colonisation is concerned, as the Asiatic element holds itself distinctly aloof from other races, and can therefore have no part in effecting an increase in the population.

China, however, is nevertheless destined to play an important *rôle* in determining the future of Oceania, and the day is probably not far distant when her children will return and be welcomed where previously they had been repulsed, and colonies may be established in the Oceanic Isles with a celestial population far exceeding that of the Hawaiian Islands, which now numbers over 12,000. There can be no question that if emigration in China were as favourably regarded by the female as the male portion of the community, it would assure for the near future the preponderance of the race in the greater part of the tropical zone of Oceania.

The celestial race is not so largely represented in the Indian Ocean, which is more remote, and in which but few inducements are held out to attract immigration. There is certainly a field for their labour in the cultivation of the sugar cane in the Antilles. But this emigration, torpid as the persons of which it is composed, has nowhere created an original type of civilisation, and labours also under the disadvantage of being unproductive of good results as far as colonisation is concerned.

We will now look into the question of the benefits which have accrued to those countries to which emigration has been mainly directed, and on this point we may observe that they have been direct gainers by the movement of European emigration, for through it their lands, which were lying waste, and either sparsely populated or inhabited chiefly by savages who lived on the produce of the fisheries or the chase, have been brought under cultivation; they have supported a more numerous population, their mining industries have been developed, their rivers and streams rendered navigable, and railways constructed, thereby greatly facilitating commercial intercourse. As a remarkable instance of the complete transformation which has been effected by immigration, we cannot do better than take the case of the United States. From 1820 to 1882 this country has benefited by immigration alone to the extent of 11,907,000 persons, and the following table will show what has been the movement of this influx, taking each decennial period, commencing from 1820:—

Periods.	Number of Immigrants.
1820-29	143,438
'30-39	599,125
'40-49	1,713,251
'50-59	2,598,214
'60-69	2,466,752
'70-79	2,954,695
'80-81 (three years)	2,044,907

And the fact must not be overlooked that the great majority of immigrants into this country are composed of persons of a productive or marriageable age, and therefore the value of this immigration is not to be measured so much by its numbers generally as by the number of strong and healthy adults, who are a direct addition to the producing and wealth increasing elements of the country. In the winter there is generally a diminution in the number of arrivals, but during the spring, and particularly in April, May, and June, there is an enormous influx of alien passengers who cross the Atlantic and land at New York, Boston, Philadelphia, or in the Canadian ports, whence they arrive by rail. The countries from which the immigrants are chiefly drawn are the British Isles, Germany, and the Scandinavian countries.

On landing, the immigrants are dispersed throughout the length and breadth of the Union, but a preference is undoubtedly shown for the northern States, where the climate is more favourable, and greater security for life and property is found than in the south. It appears from the census returns of 1880, that to the north of the basin of the Ohio and the Missouri, the density of the foreign population was at the rate of five per square mile, and south of this limit it was established at the rate of one; while the proportion of aliens to the aboriginal population in the southern States was found to be at the rate of 1 per cent., and in the far west it was as high as 50 per cent. It is chiefly from the Irish race, who settle for the most part in the north-eastern States, that the class of domestic servants are recruited. The Germans are generally to be found in Ohio and Minnesota, the Scandinavians establish themselves in Minnesota and Iowa, while the French have a decided preference for the State of Louisiana.

A regular current of emigration is directed towards Canada, and it varies in intensity according to time and circumstance, generally flowing more strongly during a period of industrial crisis or depression in England, and more particularly in Ireland. For example, during the year 1847, when there was a total failure of the potato crop in Ireland, and a general commercial depression, emigration received a great impetus, and as many as 117,032 alien passengers landed in Canada. The Irish, of whom the majority of these immigrants were composed, commenced about the year 1854 to emigrate to the United States in preference to Canada, and the effect of this deviation in the current of emigration was plainly shown in the number of Irish settlers in the latter country, the number falling to less than 8,000 in the year 1859. This diminution, however, in the tide of emigration, was regarded with considerable apprehension by the Canadian Government, who recognising that to the wholesome and prosperous progress of a colony in a new country, the constant accession of new settlers is indispensable, commenced about the year 1870 to encourage and attract immigration by the construction of railways and the sale of public lands, with the result that a decided improvement set in, and the number of immigrants arriving in the country in 1873 had risen to 99,000, of whom rather more than 35,000 came from the British Isles. In 1882-83, 121,019 persons landed in Canada, of

whom 72,281 came with the intention of establishing themselves permanently in the country, while the remaining 48,000 only passed through *en route* for the United States.

It is to Upper Canada that the immigrants generally turn their steps as the climate there is more temperate, and there is a greater abundance of fertile land, and we find that the population in this quarter of the Dominion, which had risen in 1851 to six times the number existing in 1825, doubled itself during the period 1851-81. The province of Lower Canada, which though less favoured by immigration, has nevertheless a very high birth-rate, also exhibited a rapid increase in her population, the numbers being 890,261 in 1851, and 1,319,027 in 1881, while the number of colonists of French origin, which at the period of the English annexation did not exceed 65,000, had increased when the census of 1881 was taken, to over 1,298,000.

It is generally at Montevideo or Buenos Ayres that emigrants leaving Europe for South America prefer to settle; in 1820 they commenced to flock to these places when the peace had thrown open the seas to them, but it was only after the fall of Rosas in 1853, when the security for life and property had become more assured, that any considerable number of immigrants established themselves here. The annual average number of arrivals in the Argentine Republic, which amounted to 5,000 during the period 1857-60, had increased to 38,000 in 1871-80, and to 59,843 in the year 1882. To this immigration the countries of Southern Europe, Italy, France, and Spain, have largely contributed, and this may in great measure be due to the fact that the manners, customs, and the language itself of the emigrants from these countries are more akin to those of the country of their adoption.

Taking the total number of immigrants who landed in Montevideo between the years 1861 and 1880, amounting in the aggregate to 215,000, we find a preponderance of Spaniards, Italians, and Frenchmen, and though it may be objected that the whole of the passengers landing in Uruguay do not remain in the country, but that at the lowest computation half of them either push on to Buenos Ayres or return to Europe, still there can be no question as to the material advantage accruing to the country by the acquisition of the productive forces placed at its disposal by the remaining moiety.

Brazil also must certainly take rank among those countries to which a constant stream of emigration is directed, as we find that during the thirteen years ended 1880, as many as 172,000 immigrants landed there, drawn chiefly from Portugal, Italy, France, and Germany; and as regards the latter country it is very largely represented in the southern districts of the empire, where her children possess many flourishing commercial establishments, and their numbers are being continually reinforced by fresh supplies from the mother country. German emigration indeed is conducted on so gigantic a scale, that the mother country is well able to supply any lands in want of agriculturists, artizans, or clerks. The Central American Republics are so remote from Europe, and they labour under the additional disadvantage of being so frequently

convulsed by civil wars and internal dissensions, that little inducement is held out to attract immigration, and the only nations which appear to be represented there are the English and American. The inter-oceanic canal when completed will materially affect these countries, and benefit them to a very great extent by the increased facilities for the stream of emigration, and the transport of the products and industries of the country which must inevitably result from it.

If we take then into account the residents in Canada, amounting to between 4 and 5 millions of people; those in the United States, exceeding at the end of 1883 53 millions; the European colonists in the Antilles; that portion of the population inhabiting the Spanish republics and Brazil which may be considered as of white extraction; and the 5 million inhabitants of La Plata and Chili, we find that the American continent contained no less than 80 million representatives of European races. Africa may be considered to possess an alien population of more than $2\frac{1}{2}$ millions, who have established themselves in the most favourable positions as regards trade and climate; chiefly in Algeria, Egypt, and the Cape.

In Asia Europe is represented chiefly by traders and Government officials, and she is mistress of the two extremities of this quarter of the globe, Russia having supremacy in the north, England ruling in the south, and France in the French East Indies; while on the eastern borders both Europeans and American interests are largely represented. Notwithstanding the vast extent of the Asiatic territory, it is a curious fact that there are fewer Europeans in this part of the world than in any other, the census returns of 1880 only showing a total white population of 121,000 for the whole of the Indian Empire and the Russian dominions.

In Oceania the population appears to be more evenly distributed, and although in the Malay Archipelago the Dutch and Spanish devote more attention to matters commercial and administrative than to agriculture, this is by no means the case as regards the English settlers in Australasia, for they having first been attracted by the gold fields, soon turned their attention strictly to agriculture, and their numbers according to the census of 1881 amounted to 1,800,000 persons. At the end of the last century the country was lying waste and overrun by savages entirely ignorant of the principles of agriculture or trade; at the present day we find it rich, powerful, and occupying one of the chief places among the civilized nations of the world. Much the same measures were adopted in Australia to attract emigration as were taken in the United States and the Argentine Republic, every advantage being taken of publicity to direct attention to the success awaiting the intending colonist; free allotments of land were made, and various systems were employed to obtain the necessary labour to aid in clearing the waste land, with the result that immigrants began to pour into the country. Up to the year 1837 the average number of arrivals, which had never exceeded 5,000, rose during the next three years to 15,000 while in 1841 the number of alien passengers

recorded as landing in Australia amounted to 32,000. After this year there was a considerable falling off, and it was only in 1848 and after the discovery of the gold fields in 1850 that emigration increased in intensity, for we find that in 1852 as many as 89,076 persons landed in Australian ports. The numbers again fell off considerably as the supply of gold became scarce, but it increased with the advance in the industry of sheep farming and stock raising, and the official returns have shown that since 1874 the average annual number of arrivals has never fallen below 100,000, while in 1881 it amounted to 165,000.

It may approximately be estimated that the number of representatives of European races, pure or mixed, at the present day living out of Europe exceeds 85 millions. For the most part either they or their fathers were originally attracted by the prospects of gaining higher wages than they were receiving in their own country, or of receiving a free grant of land that they might cultivate and call their own; in a word, it may be said that they have yielded to the inducement held out of ameliorating their position, and of obtaining under more favourable conditions the means of subsistence. Events have shown that taking this emigration *en masse* their anticipations have been more than realised, and the countries to which emigration has been mainly directed have vastly increased in wealth, this augmentation being directly due to the labour of the inhabitants of the country, and remaining to benefit them.

On leaving the mother country emigrants have been influenced in their choice of the land in which to establish themselves, by affinities of climate, religion, race, and language, as well as by the natural resources of the country.

We have already called attention to the fact that the number of representatives of European races distributed in various parts of the world, exclusive of Europe, at the commencement of the nineteenth century may approximately be estimated at 10 millions, and it may be asked what causes have contributed to so enormous an increase as has taken place during the last eighty-four years. Is it to be attributed to internal generation or foreign accessions? This is an interesting question, and one worthy of some consideration. We are already acquainted with the general causes determining emigration, one of the principal being the difficulty of procuring the means of subsistence in the mother country, but though this is undoubtedly a very important factor in determining the volume of emigration, it had not so powerful an effect in past years, and we are therefore forced to the conclusion that there are other and special influences which have been at work in inducing so enormous an exodus.

The most powerful of these influences is unquestionably liberty. It is owing to liberty, both political and commercial, which has superseded the prohibitive *régime* of past ages, that the population of the United States rose from 3,936,000 in 1790 to 50,155,000 in 1880, that the population of Canada has been quadrupled, and that the inhabitants of the old Spanish colonies have increased from 14 to about 25 millions. The second in importance is the

increased facility of communication, the extension of steam navigation and the railway system having brought distant continents in closer proximity; railways have penetrated into the interior of countries previously but little known and almost unexplored, and at the present day the iron road often precedes the settler; transportation may be effected both rapidly and economically, and regions which had been to a great extent inaccessible, and of little or no value in the past, are now brought within the reach of all, and have become a source of wealth to the present generation.

A third cause which has also led to an increase of emigration is the existence of human currents, which are the natural sequence of the two first causes we have enumerated. Emigration may be said to have induced emigration. The positions attained and the fortunes made by the first settlers fired the imagination of those who remained in the mother country, and operated powerfully in inducing many to leave it; and the relations maintained between the colonists and their friends at home also materially contributed to this end. Representations more or less true that have been made by the former to their countrymen as to the demand existing in their particular settlements for labour, and that certain and good wages have always been ready for those who are willing to work, have not been without effect; added to which the colonial Government fully appreciating that land without the necessary labour to cultivate it is worthless, resorted to various expedients to attract immigration to their shores, one of the most efficacious of the methods employed being the offer of land on terms within the reach of the poorest settler.

In Europe however this stream of emigration, by reason of the gigantic proportions it has sometimes assumed, has been looked upon very unfavourably by a certain class of politicians, and the exodus has frequently engaged the serious attention of the various Governments for the following reasons. That it subjects the mother country to the pecuniary loss of supplying and educating their youth until the productive stage of life, when they take their departure with all these advantages for their new homes, and that the money taken away by these emigrants must be looked upon as the withdrawal of so much of the country's capital; that the youth and backbone of the country are being extensively withdrawn from the military services, and the numerical strength of their armies is by so much diminished, which will be seriously felt in the hour of danger. That the landed interests and manufacturers complain that this constant withdrawal of hands from the labour markets is causing a considerable advance in every description of wages, and the competition they have to encounter from foreign countries becomes every year more severe.

It must be admitted that a country is quite within her right to look very carefully into the question of the burdens imposed upon her, and is justified in expecting that each of her sons should bear his share in supporting them; and when a country is in a position to colonise her own foreign possessions, it is much more to her advantage to do so than to supply other nations with her virile

population. Experience however has shown in Russia and Germany that it is a difficult task to stem the current of emigration; and this brings us to the question as to whether it is wise or the reverse to restrict emigration, and on this point we would observe that a country which checks emigration attacks the liberty of the subject, as it cannot be justifiable to prevent those who are suffering from misery and want in their country leaving it for countries where the prospect of a brighter future is held out to them. To be logical, a Government which interposes to prohibit emigration should at least provide for the wants of those whom it retains at home, and it would seem that the only case in which a Government is justified in prohibiting it, is when the intending emigrant has not fulfilled his obligations of military service, and it is even then an open question whether the advantage which a country gains by emigration would not sufficiently compensate it for the loss to its military services.

Emigration, taken from an economical and a political point of view, is manifestly an advantage to the new country, whose wealth is greatly increased by the introduction of fresh labour and capital to develop its resources; it is an advantage to the country which the emigrant leaves, as it is a decided gainer if the stream of emigration is directed to its own colonies; and it is an advantage to the emigrants themselves, as they obtain for themselves and their families the necessaries of life with increased facilities and in greater abundance. They leave the mother country with the intention of improving their condition, and though some may fail yet many succeed. There is no infallible system by which success can be absolutely guaranteed to all the members of the human race, yet that emigration is one of the best there can be no question, as is evidenced by the rapid development of wealth in those countries in which immigration is welcomed, and of which the population is chiefly composed of aliens. In the country of adoption the natural resources, through want of sufficient labour and capital, had hitherto remained undeveloped, and to the task of developing these resources the immigrant brought his capital and his skilled labour, and by the aid of these evolved the latent wealth manifestly to the advantage of the country and himself. The interests therefore of the country of adoption and the immigrant are to a great extent identical, and this will account for the wonderful change that has been effected in America, Australia, and parts of Africa, and it is owing exclusively to its enormous alien population that the United States is at the present day in a position to take rank with the great European powers.

It is true that the mother country suffers a loss in the withdrawal of so many of her virile population that she has reared and educated to a producing age; but if the country to which they depart happens to be one of her own colonial possessions, she directly benefits by the deportation, and if the country for which they leave belongs to another power it is benefited indirectly, for fresh colonisation must of itself be productive of great good, inasmuch as its immediate effect is to give an impetus to her trade owing to the establishment of new commercial centres, and by

reason of the introduction of its language, manners, and customs. As an illustration of this we may refer to the case of Germany, which, although it has no colonial possessions of her own, yet exercises an immense moral influence over the United States; and England, again, whose merchants and traders are established in every quarter of the habitable globe, is in a better position than other powers to understand the trade demands of her numerous customers and to satisfy them.

We are clearly justified then in maintaining that emigration is rather beneficial than the reverse to the countries from which it is drawn, provided that the emigrants themselves remain united in the country of their adoption, and that they maintain the national traditions. For the time being they certainly deprive the mother country of a portion of her productive forces, but the void is soon filled by the natural increase of her population, and there is a greater prospect of the interests of the mother country being materially advanced by reason of the introduction into a new country of its language, manners, and customs.

That emigration, which is one of the most national and historical facts, must not be restrained, admits of no argument. Through it the European race, whose commerce before the American war was confined to the border seas and to the Mediterranean, have now established themselves and their industries throughout the world, and it is through emigration that man has taken and is taking every day, possession of the land, his natural domain. Through it the national wealth of the world is being developed, and distances are diminished not only by the facilities of communication, but by the community of ideas, and through the interests of a race which has done much to introduce civilization into the two temperate zones.

Regarded from a political point of view, the question of emigration, so far as it affects the balance of power, is a most important one, and we must not lose sight of the fact that the world's equilibrium has been somewhat disturbed since the United States has become one of the great nations, and a new centre of civilization has been created in Australasia. It is safe to assume that the equilibrium will be still further disturbed, but it must at all times be productive of good results to the European race, which has driven back or exterminated the inferior races in the countries it has colonised, and has enrolled in its service Negroes, Hindoos, and Chinese to aid in developing the resources of these countries.

To some extent there must always be a rivalry between European and American nations, and the claim to supremacy will be disputed by them. Those countries which are anxious not only to retain their rank among the great Powers, but to preserve their trade and maintain and extend their moral and political influence, must take their part in this constant stream of the civilised race, and do so by the aid of colonisation and emigration. Colonisation is adapted to the possessions of the mother country conquered or annexed; but emigration may be extended to any country in the world, and it is well within the range of probability that in course of time the current of emigration will augment in proportion to the

increased facilities of communication, and for many years to come there will be wanting neither men in Europe to emigrate, nor land and natural wealth to require their labour in cultivating and developing.

As a free and unfettered commercial intercourse between two countries is advantageous to both, for by the exchange of their commodities the producer and the consumer are both benefited, so also must the unrestricted circulation of the human race be advantageous to all countries concerned. Each country therefore being interested in this movement, it behoves the one to encourage, or at least to refrain from interposing obstacles or raising difficulties to impede the tide of emigration, and the other to place every facility in the way of the intending settler. In briefly summing up the advantages or drawbacks of this movement, it may be said that the emigration question, which is interesting alike to the philosopher and the statesman, should not be confined to the narrow-minded calculations of the advantages it simply brings to the emigrant, but must be viewed in the more comprehensive and enlightened scope of the enormous benefits it confers upon the human race at large.

III.—*Arbère. A short Contribution to the Study of Peasant Proprietorship.* By Henry Ling Roth, Esq.

Arbère is situated near Divonne-les-Bains, in the Pays de Gex, in the Department de l'Ain, close to the Swiss frontier, between Mont Jura and the Lake of Geneva. During the war of emancipation carried on by Geneva against the Duke of Savoy, the country was overrun by the Bernese, who as allies of the city of Geneva held it for twenty-eight years, until 1564. It was afterwards annexed to France, and owing to its isolation, which obliged it to obtain its supplies from Switzerland, it was allowed certain privileges in the form of exemption from duties and excise. When Voltaire lived at Fernex, the king of France being in want of money, attempted to abolish the rights. The people resisted. Many were in consequence imprisoned and had their effects confiscated. But the inaccessibility of the country, the resistance offered, coupled with the consequent imprisonments and confiscation, gave the revenue officers such trouble that almost no revenue was obtainable. In the meanwhile Voltaire took up the cause of the people, and at last succeeded in obtaining the firm re-establishment of their ancient privileges. The Pays de Gex is therefore in the anomalous position of a province which contributes nothing to the direct revenue of the country. Voltaire certainly spent much money in the lawsuits he carried on, but the people here believe he paid 1,500,000 frs. (60,000*l.*) to emancipate them. They attribute their freedom solely to Voltaire's intervention, and do not appear to understand that he only re-established their ancient rights. They know nothing of his literary attainments.

Last summer I spent four months between Divonne and Arbère, during which period I saw a great deal of, and mixed much with the peasantry. The information I thus obtained personally I have embodied in the following paper. Being so close to Switzerland I naturally saw much of the Swiss, but in my observations now given I have confined myself to the French only.

Notwithstanding the fact that the soil is generally good, the productive power of the country is small, and the French peasant does not succeed in raising large crops. In cereal produce the average here is very low. This year, during which there has been a good dry wheat season, the produce did not exceed 3,300 English pounds of wheat per hectare, equal to 21$\frac{1}{7}$ bushels per acre.* As grain is not the staple produce, it may not be fair to take it as an example. The vineyards take up an important position, but it is to cattle raising and the production of milk that the peasants chiefly devote themselves. But even then the peasant proprietor here requires at least 3$\frac{1}{4}$ acres of land to keep one cow, and at the same time the French cow does not give more than an average of 1,800 litres, equal to 1,584 quarts, for the whole year. As we shall see further on, the peasant's economy is wrong.

To cultivate land economically is not only profitable to the cultivator, but also to the community in general, for it increases the profits of the cultivator for new investments in land or in other productive affairs, and frees otherwise useless, because uneconomical, hands for other productive employments.

Therefore in examining a country where peasant proprietorship is the rule, and comparing it with others where it is not the rule, one must not look solely to the economical side of the question, but also to the moral, thus: Is peasant proprietorship, with its *sine quâ non* of subdivision of property, conducive not only to the welfare of the peasants themselves, but also to that of their *employés* and of the country at large?

Peasants who own a cow, and consequently sufficient land to keep her, find that they can, with a little mutual neighbourly help, live fairly well. They enjoy good food, splendid vegetables, including excellent potatoes; most of them have honey; they all eat wheaten bread, and very few are without cider or *vin du pays*. They have besides butter and cheese, and never a day passes without their eating beef or *pork*, chiefly the latter. They also have comfortable houses of stone, and instead of the common English wasteful fireplaces, an economical stove is found in every peasant's home. They are frugal, and, while consuming a fair quantity of wine, they are not heavy drinkers like their Swiss neighbours in the Canton de Vaud. From the accounts of the peasants themselves, when the vintage has been good drunkenness increases; thus the vintage of 1883 was excessively bad, and there was little or no drunkenness, but this year, 1884, the vintage was excellent, and for the next twelve months drunkenness will greatly prevail.

The possession of landed property naturally makes them conser-

* Arthur Young, McCulloch, and *Lord Lovelace* have all called attention to the low produce in France. See *Journal of the Statistical Society*, vol. xi, 1848.

vative, and one is consequently not surprised to find that the majority are royalists. They argue that since the overthrow of the monarchy last century, neither Republicans nor Imperialists have been able to establish a firm Government; that the former are only capable of upsetting laws, and are in fact little better than robbers. The peasants are too busy with their own affairs to trouble about politics, and as long as any existing Government leaves them in peace, for so long they will remain quiet citizens. The following shows how they mind their own business. Since 1872 the French Government has been in the habit of publishing a weekly sheet called the *Journal des Communes*. This paper gives in a few words the chief events of the day, a *résumé* of any new law that is passed, telegraphic news of war, speeches of Ministers for Agriculture, and other matters of direct interest to the peasant communities. Nevertheless these sheets, posted at the mairie of every commune, are not much read when the matter published does not affect the peasants vitally. I have frequently met countrymen who had never heard of the Madagascar imbroglio or the Chinese war. With reference to recent statements in Parisian journals that an Englishman dare not show his face in a French peasant's home, I may state that the peasants welcomed me at their houses like one of themselves.

The Swiss, especially those of Protestant persuasion, are rather too apt to hold their Catholic French brethren in contempt, on account of the supposed influence of the priests. This influence is more traditional than active. Frenchmen on the other hand are too much inclined to over estimate the intelligence of the peasantry, and point with pride to the number of eminent Frenchmen who have risen from the ranks. In France there is a peasant population of 8,454,218 (census 1879) persons. If under such circumstances none were to rise to the surface, France would be poorly off even for ordinary intelligent citizens. On the other hand, as in most countries, tillers of the soil are looked upon with contempt. This arises partly from an ignorance of the ways of thinking of the peasants, and partly from the slowness with which peasants take up a new subject or a new invention, and which slowness is again through ignorance ascribed to slow perceptive power. A peasant does not adopt a new process easily, because he cannot afford risks, while experience shows that an old mode continues to pay. Thus as soon as his old system begins to fail, but not before, he is quite ready to adopt a new method. The low opinion which the manufacturing portion of the community, and more especially journalists, have of the peasants, and which, as I can myself testify, is deeply felt by them, is undoubtedly one of the causes of the large immigration to the towns; M. Réné Goblet calls attention to the fact that the increase of the French population between 1876 and 1881 was five-sevenths for the large towns, and only two-sevenths for the departments. Thus:—

Increase for large towns	561,869
„ departments	204,391*

* *Journal de la Société de Statistique de Paris*, vol. xxiii, p. 236.

In the main the peasants are intelligent, mind their business, and are industrious according to circumstances. The immediate effect therefore of peasant proprietorship on the peasants themselves is conducive to their material welfare, and is to make them a law-abiding and tolerably industrious community.

We now come to the influence of peasant proprietorship on the labour of the country. The labour is scanty, and its want is severely felt not only by farmers and large landed proprietors but even by the peasants themselves. This scarcity of labour makes it very dear, and at times not of rare occurrence its cost exceeds 5 frs. (4*s.*) per day, including food. Wages of a farm labourer range from 350 to 400 frs. (14*l.* to 16*l.*) per annum when engaged for the twelve months; to this must be added food, averaging 1·75 frs. per day, 638 frs. (25*l.* 10*s.* 6*d.*) per annum, equal to an average of 15*s.* 6*d.* per week. Hence, strange to say, and paradoxical as it may appear in a country where peasant proprietorship prevails, the tillers of the soil are thus bound to rely largely for their labour on a floating supply, which in this case comes from the Savoy. The very small proprietors also go out as labourers, partly because they have not enough land to keep them fully occupied, and partly because they must eke out their existence by earning wages of some sort.

Farmers and other employers complain, not without justice, that peasant labour is too independent; yet they cannot always get even this, for the average peasant is at times too pressed with his own work to be able to afford either neighbourly help or to go out for wages, and thus, what with cost and scarcity, agricultural work is not done so thoroughly as it should be.

The ranks of the labourers are greatly thinned by the emigration of such sons who have done well at school, and to whom a profession or situation offers social advantages preferable to those of the life of a peasant. The scarcity is further increased by withdrawals on account of the army. Men who learn the pleasures of town life, who have become accustomed to the gaiety of a city and to great intercourse with other people, do not care to join in the humdrum monotony which greets them on their return to their native village. They prefer to set up in business in the towns, and if they remain in the country they try if possible to obtain situations such as gardes-champêtre, concierges, &c., &c. Of the many men I have met who have served their time in the army, there is not one who does not candidly own that if it were possible he would cut his village connection and return to town life.

A labourer's position in this country is fairly good. He is a good worker (I have seen some very good ones), but if left to himself is apt to shirk his work, and rarely understands why he should work as hard as his employer. At the same time it must be remembered that the average peasant gets through the day without by any means injuring his constitution through overwork. My observations on this point lead to the conclusion that a father of a family works harder than the man without a family.

While the effect of the army and the low estimation in the social scale in which the peasant is ignorantly held, lead to perma-

nent withdrawals of labour from the cultivation of the land, the spontaneous scarcity must be looked for elsewhere.

It is now a well established fact that the population in France is increasing very slowly. Many French statisticians have called attention to this slow growth, and M. Charles Richet, the latest investigator, comes to the conclusion that it is solely due to the small number of children born to every marriage.* He further points out that, with exception of one or two departments, the decay in the increase is the same in the departments as it is for the whole country. Having visited such prolific countries as Germany, Russia, the Australian colonies, &c., I was struck by the general dead alive appearance of the French villages, caused by the want of that cheerfulness which the presence of children always imparts to their surroundings. But I think any Englishman coming direct from his native country cannot but be struck in the same way.

M. Richet points out, but in my opinion does not lay sufficient stress on the fact, that while from the beginning of the century up to the time of the Franco-Prussian war, the marriage-rate remained stationary, for the period which has elapsed since that time, the number of marriages as well as the number of births have considerably decreased. I give two tables here in order to show that not only in the past has this decay of the French population been a source of danger, but that the evil continues up to the very time of my writing.

The following table shows the decay in the number of births:—

	Number of Births in the Department de l'Ain.	Number of Births for the whole of France.
1872	9,064	966,000
'73	8,572	946,364
'74	8,615	954,652
'75	8,792	950,975
'76	8,845	966 682
'77	8,625	944,576
'78	8,229	937,317
'79	8,536	936,520
'80	8,380	920,657
'81	7,988	937,057
'82	7,795	935,566
'83	7,891	937,944

and the accompanying table shows how the marriages are annually decreasing:—

* *L'Accroissement de la population Francaise* in *Revue des Deux Mondes*, 15th April, 1882, p. 930:—

Children per marriage—	Germany	5·25
„	England	4·79
„	France	3·31

Year.	Marriages.	Year.	Marriages.
1872	352,754	1878	279,580
'72	321,238	'79	282,776
'74	303,113	'80	279,046
'75	300,427	'81	282,079
'76	291,393	'82	281,060
'77	278,094	'83	284,519

The original scarcity then is due to the decay in the increase of the population, and this again, as I propose to attempt to show, is due to the French law of succession. The effect of this law on the distribution of wealth has on several occasions engaged the attention of French economists, but, as far as I am aware, its bearing on the decay of the population has not been inquired into.

Every possessor of property has a desire to leave that property to his offspring. On the other hand, Mill points out that the only claim the child has on his father is that the father should establish him in an equal station of life, or of maintaining or improving that station. But Mill and French legislators do not agree, and we have a law in France which binds the parent to divide equally the property between the heirs direct; a law in fact which actually amounts to a system of small perpetual entails.* The French law of succession ordains the almost equal division of the property of the parents among all the children, without taking into account the nature of the property (Art. 732, Code Civile). If a parent has one child, that child must inherit half of the parent's property, the parent being allowed the disposal of the other half; if there are two children, he may dispose of a third of the property, and if there are three or more children, he may only dispose of a fourth (Art. 913, Code Civil). Occasionally a parent may wish to favour after his death one child at the expense of the rest; being allowed a fourth, he can will that fourth to the favourite child. Practically the favourite child is a son, and in the division after death the sons are always favoured at the expense of the daughters. Amongst the peasants the son or sons who remain at home obtain the house. A parent during his lifetime may wish to favour a son. As this would cause dissensions among his children, he tells them either that the present shall be registered according to Art. 843, Code Civile, with the express condition that it shall be taken into account as an inheritance at his death, and then he quietly omits the stipulation; or he proceeds in another fashion: he sells some of his property to a son, and gives the son a receipt for the cash for the same, though in reality he may have received only a very small sum, or perhaps no cash at all. This can only be carried out with a son who has been away for some time, and who therefore may be supposed to have made some money independently of the family. To successfully carry through a transaction of this sort is no easy matter, and it is very difficult to hide it from the rest of the family.

The French law of succession aims at a forced deed of insurance

* One of the errors which led to the establishment of this law is briefly explained by Sir Henry Maine in his *Ancient Law*, chap. vii, pp. 225 and 226.

against poverty on behalf of the children. It no doubt tends to the welfare of the community that poverty should be guarded against by every possible legitimate means, but this law unfortunately aims at the enforcement of an insurance against poverty, without leaving in the minds of the recipients the idea that poverty can only be guarded against by the will and work of the individual. But as the effects of the law in this direction are worse than nil, we may leave out this part of the question. Its futility as a prevention of poverty has been discussed by Louis Blanc and others.

The evil lies in the fact that the law gives the child a claim to its parent's property. This very fact at the same time forces the parent into an injustice which he is powerless to avoid. Beyond the disposal of a fourth, it prevents him from recompensing such of his children who may have deserved reward on account of work performed. It is also manifestly unfair that a drunken undutiful or idle son who has always been a burden to his family should inherit equally with a hard working son, who by his energy and labour has added considerably to the value of the family's property. Then there is the case of the son who has not returned from the towns on his release from the army. He has left a home where, up to the date of his departure, he has been a burden rather than a help, yet when settled and well to do on the death of his parents he shares almost equally with those who have by the sweat of their brow made the property what it is. On the decease of the parents the property is all divided, and it is exceptionally rare that any portion of the land is mortgaged in order to buy off the claims of other co-inheritors. Thus peasants, who love their offspring no less than members of other classes of the community love theirs, see in advance, by judging of their surroundings, that they are debarred from doing with their property as they please; and, still not desiring to act in any way unjustly, try to have as few children as possible. They are confirmed in their ideas by the fact that children are a heavy expense.

When there are children the peasants cannot live so well or comfortably, expenses increase, and as they say they have to buy "des petits souliers." M. Richet points out that after the lapse of a certain number of years a small family produces little, while a numerous family produces much. This is correct in so far as the country at large is concerned, but a peasant looks at it from quite a different point of view, from a matter of expense pure and simple. Practically M. Richet is correct in all cases where the sons remain at home instead of going abroad to earn a living. With few exceptions a peasant, who has a family of several working children, is, in the long run, a richer man than his childless neighbour. He may at the commencement of his life live with less luxury, and generally have to work hard, which he certainly does not do unless under pressure; as his children grow up they become such undoubted help that he soon begins to increase his wealth on a comparatively fair scale. Up to 6 years of age a child's clothes cost 50 frs. (2*l.*) per annum; at 10 years of age the child's clothes cost almost double that sum, and he is a great eater; three years later

the increase in the cost of clothes is little, but he eats as much as a man. I have made the following calculation of cost of bringing up a child up to its fourteenth year. I spoke to several parents on the subject, but found it very difficult to get correct information; the estimates they made went from one extreme to another, and they found a natural obstacle in calculating the cost of much of the food produced by the household. It must be remembered that the children are well dressed, and one never sees a child without a hat, or cap, or without boots (sabots) and stockings. They all drink wine from infancy.

The following is my estimate of bringing up a child:—

1 to 6 years inclusive—			
Cost of clothes	50 frs. per ann.		
„ food 70 centimes a-day	255 „		
Total	305 frs.	× 6	1,830 frs.
7 to 10 years inclusive—			
Cost of clothes	80 frs. per ann.		
„ food	300 „		
Total	380 frs.	× 4	1,520 „
11 to 13 years inclusive—			
Cost of clothes	100 frs. per ann.		
„ food	365 „		
Total	465 frs.	× 3	1,395 „
Total			4,745 „

equal to 189*l.* 16*s.* for the thirteen years, or 7 frs. (equal to 5*s.* 7$\frac{1}{6}$*d.*) per week.

I acknowledge the above account to be open to criticism, but the error probably lies in an under rather than in an over estimate. An average boy at the age of 13 begins to be a help in so far as to cease to be a burden; he goes out as a shepherd or cowboy, and besides his board makes a few francs wages. At 19 years of age he can earn almost as much as a man; and thus from 14 to 21 when he joins (most unwillingly) the army, his wages if he is steady, industrious, and intelligent, may have been much as follows: 50, 50, 80, 100, 125, 180, 250, 300, or a total of 1,135 frs. (45*l.* 8*s.*); of which probably less than one-half goes into the parents' cash box. For the next four and a half to five years the army upsets him and his ideas, and during that period the parents have to send him money. When he returns, if the parents are rich enough, a division of property is made *sous rapport* (Arts. 1075 and 1076, Code Civile), and he marries, the old people being agreeable; but if there are not enough children to work the property without a farm servant objections are raised to his marriage. When the parents' property is too small to support him he leaves home to work elsewhere. In any case while the law gives him a claim to the parents' property he does not repay the parents the cost of his education,

and the parents find it does not pay to have children. With daughters the case is worse. If the family be rich the girls marry easily, otherwise they have to go out to service, and in either case their cost has not been repaid. Then again, three or four brothers and sisters inheriting a common property, find they can live in fair circumstances thereon as long as they do not marry, hence they remain unmarried. Were there only one son or daughter they might marry and still live comfortably.

The above considerations therefore incline the peasants to the opinion that the less children they have the better it is for themselves and for those children. Unfortunately they act up to this opinion. It must be difficult for a robust healthy peasantry to wholly withstand proclivities common to all mankind, and consequently other means are resorted to to prevent an increase of the population. As may be expected, the clergy exert themselves not a little to overcome this unnatural state of affairs, and their want of success shows, I fear, how little is the influence they possess over their flocks. The clergy, who may naturally be supposed to obtain their knowledge through the confessional, blame the men for not being good husbands. On the other hand, the men curse the clergy for interfering in matters which do not concern them. The men blame the midwives (*sages femmes* and others), but in any case, wherever may lie the cause, there is no doubt that husband and wife agree on the non-desirability of having children. The feeling with regard to families is so strongly developed, that a man who has a family worth speaking about is now an object of scorn amongst the peasants. Married women who have only one or no children, when asked why they have no children, will reply "One is quite enough," or, "if I had children, what should I do with them?" or, "it is too expensive to have children."

The compilers of the Code Civile, evidently judging by the past, foresaw that the law of succession would lead to a disastrous subdivision of the land, and although the code otherwise takes no notice of the nature of the property (Art. 732), the law lays special stress on the avoidance of cutting up landed property more than is absolutely necessary; thus Art. 832 says: "Dans la formation et compositions des lots, on doit éviter autant que possible de morceler les heritages et de diviser les exploitations, etc., etc." The law of succession, with its accompanying compulsory division of property, dates from 1740, and had thus been in operation for some sixty years when the Code Civile was drawn up. The recommendation of the commission has been carried out in a most unexpected way, for to prevent subdivision the peasants avoid having children.

Subdivision of property is a great hindrance to progress, as exemplified by machinery superseding the work of man and beast. On a quarter of an acre of meadow there is no scope for a Wood's mower, and on half an acre under wheat a Hornsby's reaper would not pay. In a country so excessively subdivided as this is, a firm like Fowler's could not exist. But if on the one hand the subdivision of property carried to such extremes is a bar to progress, on the other hand it fosters the association of men for the attain-

ment of a common end. I refer to the dairy co-operative societies. In England we have sufficient proofs of the benefits derived from co-operation, but as far as I am aware we have no societies which deal with agriculture, in which the co-operators are small landowners or peasant proprietors.

In this part of France sixty to eighty years ago the peasants were satisfied with making small half-pound cheeses, but since the beginning of the present century they have established co-operative dairy societies, evidently copied from the Swiss. A number or the greater part of the inhabitants of a village combine together to build a dairy. They then engage a dairyman at a fixed rate of wages, and all the butter and cheese made in the twenty-four hours belongs for that day to the individual to whose credit there stands in the books the greatest amount of milk. On this system every member of the community becomes a shareholder in a cheese factory. For the very small man this is good, for under no other circumstance would it be possible for him to make the most of his cow. The man who has six cows naturally receives the produce six times for every once that the possessor of the one cow does, and as the bigger man has priority of pay, the poorer man has often to wait a considerable time before his turn arrives.

With one or two exceptions this is about the only system under which the peasants co-operate. It may be regretted, seeing how successful they are with this dairy system, that they do not combine for other purposes. When we come to inquire the reason why, we find that co-operation in practical cultivation of the land is not such an easy matter as it is in manufactures, or in retail trade. In the first place the land is very much partitioned. A peasant may own land in three separate portions in three distinct communities, and which are often two or more miles distant. A man as matters now go can attend fairly well to such isolated pieces, but were each of these three isolated pieces to come under the jurisdiction of distinct co-operative societies, in which the work had all to be done at the same time, such as sowing or harvesting, the proprietor could not perform his share of the work. Then a more regular system of farming would have to be introduced, for there is no regular rotation of crops in peasant cultivation. Again, some soils may require manure, while others may not; and some peasants may not manure, either because they have sold theirs, or suffer from insufficiency. This may affect the time for sowing. Some peasants grow wheat after wheat, others potatoes or clover; and as also adjoining soils are of a different texture, the crops do not ripen at the same moment. Hence it would be impossible to associate in order either to sow or to cut the crop by machinery. Arable land, meadow land, and vegetable gardens being interspersed, agricultural association would be impossible without a revolutionary rearrangement of the properties, and of a tyrannous system tending to degeneration by forcing each individual to do exactly and at the same moment what his neighbour is doing. It might be proposed that peasants should throw their land into one common whole; but these petty proprietors are not of the calibre to listen to any such suggestions, and finally,

common holdings would interfere with the provisions of the law of succession.

The return a peasant makes on his land is about 3 per cent. on its capital value. This is more than many English landlords can obtain. For leased land, on the contrary, he barely makes 1 per cent. The people here have not had to put up with a long series of bad seasons, and with the exception of American pork, they have not had any formidable competition to cope with. There is however a large demand for land, not so much for direct building or agricultural purposes, as for the investment of small savings. Losses, incurred by investing in speculations promising high returns, have taught both shopkeepers and peasants that security is preferable to big dividends with an ultimate disappearance of the capital. Consequently as soon as any man or woman has saved a few thousand francs, the money is withdrawn and put into land, for which perhaps as much as 2 per cent. may be obtained. As a son of the soil once explained to me, "It is better to lay out one's money in the sun where one can see it, than to place it in a chest where one cannot see it." The same as in England, therefore, the return on the land is reduced by the demand for the land.

To sum up peasant proprietorship, the outcome of the French law of succession, tends to the immediate material benefit of the peasants themselves. At the same time, the limit of subdivision having been reached, in conjunction with the provisions of the law above, peasant proprietorship leads to a decay of its own population. It cannot therefore be considered conducive to the *permanent* welfare of the peasants, as the result is a scarcity of labour deleterious both to the peasants and to the country at large. Lastly, the produce raised by the peasants per acre is, as is well known to all economists, low and dearly purchased, and the system precludes economical assistance on the part of machinery, in fact limiting agriculture to a more or less primitive condition.

IV.—*The Fires in London during the Year* 1884, *and the Metropolitan Fire Brigade.*

The following particulars are taken from Captain Shaw's Report for 1884, to the Metropolitan Board of Works, in continuation of similar notices for previous years:—

"The number of calls for fires, or supposed fires, received during the year has been 2,806. Of these 373 were false alarms, 144 proved to be only chimney alarms, and 2,289 were calls for fires, of which 194 resulted in serious damage, and 2,095 in slight damage.

"These figures refer only to the regular calls for fires, or supposed fires, involving the turning out of firemen, fire engines, fire escapes, horses, and coachmen; they do not include trifling damages by fires which were not sufficiently important to require the

attendance of firemen; neither do they include the ordinary calls for chimneys on fire, which are separately accounted for further on.

"The fires of 1884, compared with those of 1883, show an increase of 145; and compared with the average of the last ten years, an increase of 531.

"The following table gives the result both in actual numbers and percentages:—

Year.	Number of Fires.			Percentages.		
	Serious.	Slight.	Total.	Serious.	Slight.	Total.
1866.....	326	1,012	1,338	25	75	100
'67.....	245	1,152	1,397	18	82	100
'68.....	235	1,433	1,668	14	86	100
'69.....	199	1,373	1,572	13	87	100
'70.....	276	1,670	1,946	14	86	100
'71.....	207	1,635	1,842	11	89	100
'72.....	120	1,374	1,494	8	92	100
'73.....	166	1,382	1,548	11	89	100
'74.....	154	1,419	1,573	10	90	100
'75.....	163	1,366	1,529	11	89	100
'76.....	166	1,466	1,632	11	89	100
'77.....	159	1,374	1,533	10	90	100
'78.....	170	1,489	1,659	10	90	100
'79.....	159	1,559	1,718	9	91	100
'80.....	162	1,709	1,871	9	91	100
'81.....	167	1,824	1,991	8	92	100
'82.....	164	1,762	1,926	9	91	100
'83.....	184	1,960	2,144	9	91	100
'84.....	194	2,095	2,289	9	91	100

"The number of fires in the metropolis in which life has been seriously endangered during the year 1884 has been 137; and the number of these in which life has been lost has been 29.

"The number of persons seriously endangered by fire has been 200, of whom 158 were saved, and 42 lost their lives. Of the 42

lost, 20 were taken out alive, but died afterwards in hospitals or elsewhere, and 22 were suffocated or burned to death.

* * * * *

"The number of calls for chimneys has been 4,532. Of these 1,641 proved to be false alarms, and 2,891 were for chimneys on fire. In these cases there was no attendance of engines, but only of firemen with hand-pumps.

"The number of journeys made by the fire engines of the 55 land stations has been 30,503, and the total distance run has been 69,602 miles.

"The quantity of water used for extinguishing fires in the metropolis during the year has been almost exactly 42 million gallons, or about 187,000 tons. Of this quantity, about 105,000 tons, or considerably more than one-half of the whole, were taken from the river, canals, and docks, and the remainder from the street pipes.

"During the year there have been 15 cases of short supply of water, 21 of late attendance of turncocks, and 7 of no attendance, making altogether 43 cases in which the water arrangements were unsatisfactory; but, notwithstanding this, it is my duty to say that all the water companies have made great efforts to serve us, and that we owe them our sincere thanks for their exertions.

"I have also, as usual, to express my obligations to the metropolitan and city police, who invariably assist us in every way in their power. It is impossible to exaggerate the value which we attach to their unceasing kindness and co-operation.

"The strength of the brigade is as follows:—

55 land fire engine stations.
23 hose cart stations.
127 fire escape stations.
4 floating „
2 large land steam fire engines.
42 small „
87 six-inch manual fire engines.
37 under six-inch manual fire engines.
144 fire escapes.
5 long scaling ladders.
3 floating steam fire engines.
2 steam tugs.
5 barges.
62 hose carts.
14 „ and coal vans.
4 ladder vans.
12 waggons for street stations.
2 street stations.
1 trolly for engines.
1 „ ladders.
2 ladder trucks.

589 firemen, including chief officer, second officer, superintendents, and all ranks.
14 pilots.
66 coachmen.
131 horses.

"During the year there has been a large development of our telegraphic system, and we have now the following lines of communication in complete working order:—

40 telegraphs between fire stations.
24 telephones ,,
1 direct fire alarm ,,
34 alarm circuits round fire stations with 220 call points.
4 telegraphs to police stations.
16 telephones ,,
15 telegraphs to public and other buildings.
16 telephones ,,
13 direct fire alarms ,,

"The number of firemen employed on the several watches kept up throughout the metropolis is at present 118 by day and 372 by night, making a total of 490 in every twenty-four hours; the remaining men are available for general work at fires.

"Our list of wounds and other injuries for 1884 is unusually large; but considering the risks to which all ranks have been exposed, and the way in which the work has been done, it cannot be thought excessive. This list is always heavy.

* * * * *

"A reference to the figures in this report will show that the total number of calls, including those for actual fires, supposed fires, chimney fires, and supposed chimney fires, has been 7,338, or a little over 20 a day, all of which have been attended by firemen with proper appliances.

"In addition to the fires we have kept 178,850 watches of twelve hours each, have maintained all the machinery of the brigade in working order, written several thousand reports, and carried on a variety of other work.

"I have made a special study of what is done by forces of every kind in all countries, and I think I can justly say that no public body of men anywhere has ever, even in an exceptional year, been called on to go through as much constant severe labour as this brigade has undergone in the last few years, and especially during the year 1884.

"I daresay we have made some mistakes, but I know that all ranks have worked hard and done their best, and I trust that the result has been satisfactory to the Board."

* * * * *

The following particulars (*a*, *b*, *c*) are obtained from the tables appended to the report:—

(*a*) The fires classified according to occupations, arranged in the order of frequency of occurrence; to which are added, for the purpose of comparison, the corresponding figures for the three previous years:—

Number.	Occupations.	Number of Fires.			
		1884.	1883.	1882.	1881.
1	Private houses	530	440	423	427
2	Lodgings	309	256	235	236
3	Victuallers	77	65	58	68
4	Oil and colourmen	52	48	30	32
5	Greengrocers and fruiterers	38	34	26	23
6	Drapers	35	40	21	32
7	Tailors, clothiers, and outfitters	34	27	28	26
8	Unoccupied	33	13	22	31
9	Under repairs and building	31	32	22	25
10	Cabinet makers	28	28	30	38
11	Grocers	28	42	44	33
12	Offices	28	16	16	24
13	Boot and shoe makers	26	30	36	30
14	Builders	26	35	27	32
15	Printers	25	14	22	18
16	Stables	25	12	21	13
17	Beershop keepers	24	19	8	19
18	Refreshment rooms	24	13	19	18
19	Tobacconists	24	22	22	19
20	Bakers	23	30	23	16
21	Corn dealers	22	16	10	16
22	Railways	21	15	14	9
23	Booksellers, binders and stationers	20	21	26	24
24	Coffee houses	20	46	31	33
25	Engineers and machinists	20	15	12	14
26	Chandlers	19	30	18	9
27	Confectioners and pastrycooks	17	33	19	9
28	Farming stock	17	10	8	20
29	Fried fish shops	17	8	11	9
30	Furniture makers and dealers	15	17	16	19
31	Hairdressers	14	5	10	8
32	Wine and spirit merchants	14	8	10	9
33	Chemists, and laboratories for chemical purposes	13	16	13	8
34	Furriers and skinners	13	7	5	15
35	Provision merchants	13	12	7	8
36	Public buildings, not theatres	13	8	6	13
37	Warehouses	13	27	13	12
38	Butchers	12	13	7	7
39	Schools	12	8	6	11
40	Coach builders	11	5	7	6
41	China, glass, and earthenware dealers	10	12	2	11
42	Waggons on the road	10	10	—	4
		1,756	—	—	—
	Remainder, varying from 9 to 1	533	—	—	—
		2,289	—	—	—

(*b*) The fires classified under the causes to which they have been assigned, and arranged in the order of frequency of occurrence:—

Causes.	Number of Fires.
1. Unknown	650
2. Lamps (not gas) and lights (thrown down)	445
3. Gas (in various ways)	215
4. Defective, or improperly set—flues, ovens, furnaces, boilers, stoves, &c.	159
5. Sparks from fires, &c.	153
6. Candles	142
7. Children playing with fire, matches, &c.	94
8. Overheating of—flues, ovens, furnaces, boilers, stoves, &c.	77
9. Hot ashes	66
10. Foul flues	49
11. Airing linen and drying stoves	43
12. Boiling over, or upsetting of fat, pitch, &c.	43
13. Smoking tobacco	31
14. Lucifer matches	24
15. Spirits, or vapour of spirits, in contact with flame	16
16. Spontaneous ignition	13
17. Lime slaking by rain and otherwise	10
18. Doubtful	7
19. Incendiarism	6
20. Fire, clothes coming in contact with	4
21. Fireworks, letting off	4
22. Friction of machinery	4
23. Intoxication	4
Miscellaneous, varying from 3 to 1	20
Total	2,289

(*c*) The following table giving the totals of the fires for each day of the week for the last ten years, shows on the average that the largest number of fires occur on Saturday and the smallest number on Monday. The annual average number of fires for the last ten years is 1,829:—

Years.	Sunday.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.	Total.
1875....	200	203	231	227	236	209	223	1,529
'76....	260	218	226	235	242	221	230	1,632
'77....	192	218	212	224	243	216	228	1,533
'78....	260	191	271	234	214	236	253	1,659
'79....	235	212	231	257	264	251	268	1,718
'80....	288	262	253	259	254	266	289	1,871
'81....	270	267	315	288	279	253	319	1,991
'82....	285	246	296	267	281	274	277	1,926
'83....	297	334	309	318	269	295	322	2,144
'84....	296	330	304	335	338	340	346	2,289
Total...	2,583	2,481	2,648	2,644	2,620	2,561	2,755	18,292

V.—*German Literature of* 1883 *and* 1884.

The following is taken from the *Publishers' Circular* of the 2nd February, 1885 :—

"Systematic view of the literary productions of the German publishing trade in 1883 and 1884, extracted from the *Börsenblatt:*—

		1883.	1884.
1.	Collections or sets of works—literary history, bibliography	381	438
2.	Divinity	1,504	1,461
3.	Law, politics, statistics, trade	1,301	1,472
4.	Medicine, veterinary	922	928
5.	Natural history, chemistry, pharmacy	832	835
6.	Philosophy	142	132
7*a*.	Education, school-books, physical education	1,691	2,029
7*b*.	Juvenile books	386	406
8.	The classics and oriental languages, antiquities, mythology	609	612
9.	Modern languages, old German literature	501	489
10.	History, biography, memoirs, correspondence	795	807
11.	Geography and travel	290	460
12.	Mathematics and astronomy	221	204
13.	War, hippology	366	380
14.	Mercantile science, technology	671	698
15.	Building, engineering, mechanics, mining, navigation	482	411
16.	Sport and forestry	98	106
17.	Domestic economy, agriculture, gardening	337	387
18.	Belles lettres, novels, poems, drama, &c.	1,207	1,303
19.	Fine arts—painting, music, &c.; shorthand	615	623
20.	Popular literature, almanacks, &c.	724	643
21.	Freemasonry	28	26
22.	Miscellaneous	370	450
23.	Maps	329	307
	Total	14,802	15,607

VI.—*English Literature in* 1884.

The following particulars are taken from the *Publishers' Circular* of the 31st December, 1884, in continuation of a series of similar extracts for previous years :—

"The analytical table of the book issues of the year 1884, which we give according to custom in our present issue, shows an increase of 228 on 1883, or, if we simply take the new books and exclude the new editions, the increase is exactly 100. This, although not equal to the rise in number in 1883 as compared with 1882, is at least sufficient to show that there has been no backward movement

during the twelve months. Of the total issues of new books, theology stands at the head with 724 volumes, more than one-sixth; juvenile works and tales stand second with 603, about one-eighth; educational, classical, and philological books 543, about one-ninth; history, biography, &c., 490, more than one-tenth; books on the arts and sciences, and illustrated works, 432, one-eleventh; novels, tales, and other fiction, 408, more than one-eleventh; year books and volumes of serials, 323, one-fifteenth; voyages, travels, and geographical works, 236, one-twentieth; pamphlets, sermons, and miscellaneous works, 208, one twenty-third; and then with less than 200 volumes come poetry and the drama, 179; law, jurisprudence, &c., 163; medicine, surgery, &c., 160; and belles lettres, essays, &c., also 160. Comparing the new works of 1884 with those of 1883, the greatest increase is in books on the arts and sciences—a rise of 78; next stand history and biography with a rise of 76; then come novels, tales, and other fiction with an increase of 59; poetry and the drama with a growth of 34; voyages and travels with a rise of 26. The increase, on the whole, is counterbalanced by a falling off of 138 in the issues of juvenile works and tales, and of 96 in belles lettres; the only other classes in which there is a reduction being the educational, classical, and philological works, which show a small reduction of 13, and the medical works with a diminution of 3. In the new editions the issues of 1884 show an increase of 128 on those of 1883, including a rise of 60 in the novels, 32 in law and jurisprudence, 22 in arts and sciences, 35 in poetry and the drama, and 31 in belles lettres; but there was a reduction of 44 in juvenile works, and several other slight alterations.

Divisions.	1883.		1884.	
	New Books.	New Editions.	New Books.	New Editions.
Theology, sermons, biblical, &c.	704	208	724	205
Educational, classical, and philological	556	135	543	140
Juvenile works and tales	741	198	603	154
Novels, tales, and other fiction	349	229	408	289
Law, jurisprudence, &c.	139	84	163	116
Political and social economy, trade and commerce	187	38	203	36
Arts, sciences, and illustrated works	354	137	432	159
Voyages, travels, geographical research	210	75	236	95
History, biography, &c.	414	122	490	133
Poetry and the drama	145	14	179	49
Year books and serials in volumes	315	12	323	1
Medicine, surgery, &c.	163	90	160	55
Belles lettres, essays, monographs, &c.	256	48	160	79
Miscellaneous, including pamphlets, not sermons	199	23	208	30
	4,732	1,413	4,832	1,541
	6,145		6,373	

Analytical Table of Books Published in 1884.

Subjects.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total of Books on each Subject for the Year.	
Theology, sermons, biblical, &c.	*39	37	77	44	65	50	47	30	31	63	88	153	724	
	†10	12	20	13	11	20	16	21	9	16	20	37	205	
													—	929
Educational, classical, and philological	*17	46	57	46	59	31	57	24	37	59	48	62	543	
	† 6	10	17	17	14	7	14	3	5	13	14	20	140	
													—	683
Juvenile works and tales	*23	20	29	20	44	25	29	16	43	148	127	79	603	
	† 5	15	18	9	8	10	10	5	10	24	22	18	154	
													—	757
Novels, tales, and other fiction	* 9	32	31	25	28	21	32	21	19	26	59	105	408	
	† 4	11	17	26	31	31	28	32	18	19	35	37	289	
													—	697
Law, jurisprudence, &c.	* 7	15	16	14	11	14	38	7	6	7	7	21	163	
	† 2	17	8	1	5	3	37	3	10	5	9	16	116	
													—	279
Political and social economy, trade and commerce	*14	20	26	11	10	14	12	17	16	13	28	22	203	
	†—	3	3	—	2	3	8	5	4	5	1	2	36	
													—	239
Arts, science, and illustrated works	*16	19	35	29	31	40	59	26	16	37	47	77	432	
	† 4	7	16	8	15	7	14	8	11	23	16	30	159	
													—	591
Voyages, travels, and geographical research	* 6	18	27	16	16	32	14	17	8	17	29	36	236	
	† 1	5	2	6	8	13	16	8	5	12	11	8	95	
													—	331
History, biography, &c.	*20	40	53	40	47	53	36	24	21	39	59	58	490	
	† 3	17	17	13	11	6	13	9	3	17	17	7	133	
													—	623
Poetry and the drama	*10	13	24	11	10	10	35	3	4	14	17	28	179	
	†—	—	1	2	7	1	8	3	3	7	6	11	49	
													—	228
Year books and serials in volumes	*29	28	20	10	15	9	30	13	7	23	35	104	323	
	†—	1	—	—	—	—	—	—	—	—	—	—	1	
													—	324
Medicine, surgery, &c.	*12	10	27	17	14	18	39	11	3	9	—	—	160	
	† 6	8	5	3	8	7	6	3	2	7	—	—	55	
													—	215
Belles lettres, essays, monographs, &c.	*12	20	21	13	10	8	12	2	4	5	15	38	160	
	†—	1	4	3	—	2	1	3	5	12	19	29	79	
													—	239
Miscellaneous, including pamphlets, not sermons	* 6	6	14	13	15	16	18	12	6	21	32	49	208	
	† 1	—	1	3	2	3	3	1	2	7	2	5	30	
													—	238
	262	431	586	413	497	454	632	327	308	648	763	1054		6,373

* New books. † New editions.

VII.—*Emigration and Immigration in the Year* 1884.

The following is a copy of Mr. Giffen's report to the Secretary of the Board of Trade, on the "Statistical Tables relating to Emigration and Immigration from and into the United Kingdom in the year 1884:"—

"In presenting the annexed statistical tables the main fact to which I have to call attention is the very great decline of emigration which has taken place in 1884. In 1883 there was also a decline of emigration as compared with the previous year, but the decline, on analysis, appeared to be exclusively a falling off in the emigration of foreigners from the United Kingdom, there being a very large increase in the emigration of persons of British and Irish origin only. It appeared to me, however, looking at all the facts, that to some extent this increase of emigration of persons of British and Irish origin was due to the fact that the emigration had been specially stimulated, the natural current being in the direction indicated by the decline of foreign emigration. In 1884, however, the facts are all one way. There is a general and large decline in emigration, and the decline is accompanied by an increase of immigration from the countries to which emigration in ordinary years takes place. If it be true that the emigration in 1883 of persons of British and Irish origin was largely an assisted emigration, and not such as would have taken place in the ordinary course, and from natural causes only, then it may be considered that for two years past the natural tendency has been for emigration to fall off, and this tendency was more marked in 1884 than it had been in any previous year since the great increase of emigration in 1881.

"The general figures can be very simply stated. Going back to 1877, in which year emigration as compared with previous periods had fallen to a minimum, the excess of emigrants over immigrants in that year being quite inconsiderable, it appears that in each of the following years, 1878 to 1882 inclusive, there was a steady increase of emigration, the total in 1882 being 413,288, and the net emigration, *i.e.*, the excess of emigrants over immigrants, being 330,484. The corresponding figures for the year 1884 are, emigration, 303,901, and the excess of emigrants over immigrants 180,435. Confining our attention to the emigration of persons of British and Irish origin only, the corresponding figures would be, emigration 242,179, as compared with 320,118 in 1883, the maximum year; and 150,823, the excess of emigrants over immigrants, as compared with 246,314 in 1883, the maximum year.

"It would thus appear that while the maximum of total emigration was reached in 1882, and the maximum of the emigration of persons of British and Irish origin only in 1883, yet the decline in 1884 from the maximum, whether of 1882 or of 1883, is proportionately as large in one case as in the other. This would appear to confirm the supposition that to a large extent the emigration of persons belonging to the United Kingdom in 1883

was an assisted emigration. In any case the figure of 150,823 as the excess of emigrants over immigrants of British and Irish origin is the smallest of any year since 1879, in which the excess was 126,338. Thus, after an unusually large emigration in 1882 and 1883, the year 1884 has witnessed a falling off to comparatively small figures.

"Comparing the figures as to emigration alone, without taking into account the immigration for the years 1883 and 1884, we obtain the following comparison:—

(*a.*) *Emigration in* 1883 *and* 1884.

	Total, including Foreigners.	Emigrants, of British and Irish Origin only.
Number of emigrants in 1884	303,901	242,179
„ '83	397,157	320,118
Decrease	93,256	77,939

"From this it appears that the falling off in the total emigration in 1884, as compared with 1883, is from 397,157 to 303,901, or a decrease of 93,256, the decrease from the maximum in 1882 amounting to very nearly 110,000. As regards emigrants of British and Irish origin only the decrease is from 320,118 in 1883 to 242,179 in 1884, a decrease of 77,939 in one year only. It would appear on a comparison of these two figures that the falling off in the foreign element between 1883 and 1884 was much less marked than the falling off in the emigration of British and Irish origin only; but the explanation, no doubt, is the very large falling off in the foreign element which took place in 1883 as compared with 1882. There is no reason to suppose that this decrease in the foreign element, which is now very considerable when the comparison is made for the two years, is more than partly due to a change in the route by which foreigners emigrate to foreign countries. The principal route of such emigration is still through the United Kingdom. According to the United States returns, and the United States is the principal destination of emigrants, it is evident that there has been a real falling off in the emigration of persons of every nationality in Europe. As pointed out below—continuing certain information given in former reports—there is also a small amount of emigration from the United Kingdom by way of continental ports, but the figures are still too inconsiderable to affect the general totals with which we are here dealing.*

* "One of the reasons for drawing attention to this question of change of route in my former reports was the fact of a certain portion of the emigration from the United Kingdom going to the United States by way of the continental ports, Antwerp, Rotterdam, and Amsterdam. It would appear, however, that the number of emigrants proceeding by way of continental ports in 1884 was smaller than in 1883 or 1882. The following is an account of the emigration by

"The magnitude of the change which has occurred in the emigration is shown by a comparison of the proportion of emigration to the population living at home. Last year I pointed out that, notwithstanding the magnitude of the emigration in 1883, and the increased proportion of that emigration to the population in the years immediately preceding, yet that proportion itself, viz., 0·90 per cent., was still less than what it had been in the early years when the separate record of the emigration of persons of British and Irish origin only begins. In 1853 and 1854 the proportion was as high as 1·01 and 0·97; now, however, on a large decline of the emigration occurring, the proportion has fallen to 0·67, which is a proportion that has been several times exceeded.

"Coming to the figures of immigration, we find that the increase in that element, which usually accompanies the commencement of a decline in the emigration, is very marked indeed:—

(*b.*) *Increase of Immigration.*

	Total, including Foreigners.	Immigrants of British and Irish Origin only.
Number of immigrants in 1884	123,466	91,356
„ '83	100,503	73,804
Increase	22,963	17,552

"Thus the immigrants returning in 1884 were no fewer than 123,466, as compared with 100,503 in 1883, an increase of 22,963. The numbers have been gradually increasing since 1879, the year when emigration itself began to increase, the increase, as compared with that year, being very nearly 70,000. As anticipated also in the report which I wrote a year ago, this figure of 123,466 is the largest on record, the highest figure in any previous year being 118,129 in 1874, which also took place in the first year of a great

this route, the figures being inserted here for future reference, and in continuance of those of last year:—

Nationality.	Adults.				Children under 12 Years of Age and Infants.		Total.	
	Married.		Single.					
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
English	161	188	1,022	102	141	109	1,324	399
Scotch	11	9	30	3	—	1	41	13
Irish	10	14	56	24	9	6	75	44
Total British..	182	211	1,108	129	150	116	1,440	456
Foreigners	60	65	354	38	45	36	459	139
Grand total....	242	276	1,462	167	195	152	1,899	595

decline in emigration itself as compared with previous years. Similarly, as regards persons of British and Irish origin only, the increase last year as compared with 1883 is from 73,804 to 91,356, or in all, 17,552; while the increase, as compared with the year 1879, amounts to very nearly 54,000. Here also the figure of immigration for 1884 is the largest on record, the highest in any previous year since 1876, to which date only is it possible to carry back the comparisons, for persons of British and Irish origin only, being 73,804 in 1883.

"According to former experience all the figures for the year 1885 ought to be smaller than they were for the years just passed. Immigration will probably be less; but then also emigration will be much less, and the excess of emigrants over immigrants much smaller than it has lately been. Experience is as yet too limited to permit of the statement being made absolutely, and it is of course impossible to foresee all the circumstances that may affect great movements of population. All I am pointing out is that on former occasions, as far as we can carry back the comparison, an increase of immigration has been found to accompany an increase of emigration, and to reach its maximum in those years when the emigration begins to fall off from the maximum it has itself reached. Then in the succeeding years emigration and immigration both decline, the minimum, however, in the case of emigration, preceding the minimum in the case of immigration, which, as a rule, occurs in the first year after the emigration, having declined, begins again to increase.

"Coming then to the facts as to the excess of emigrants, we find that these facts may be presented in the following table, which continues a table in the same form published in former reports:—

(*c.*) *Excess of Emigrants.*

	Total Emigration and Immigration.	Emigration and Immigration of Persons of British and Irish Origin only.
Number of emigrants in 1884	303,901	242,179
„ immigrants '84	123,466	91,356
Excess of emigrants	180,435	150,823
Corresponding excess in 1883	296,654	246,314
„ '82	330,484	224,655
„ '81	315,409	190,295
„ '80	263,978	180,535
„ '79	163,190	126,338
„ '78	69,712	57,958
„ '77	38,123	31,305
„ '76	44,665	38,065

"From this it would appear that the excess of emigrants, as regards the total emigration and immigration, is very little more now than one-half what it was in 1882, the falling off being from

330,484 in that year to 180,435 in 1883. As regards the emigration and immigration of persons of British and Irish origin only, the decline from the maximum, in 1883, is not quite so great, but it is still very much more than one-third; it is from 246,314 to 150,823. The year 1883, therefore, must be regarded in all respects as an exceptional year for the emigration of persons of British and Irish origin only.

"The fact being thus evident that there is a general decline in emigration, which has practically been going on for two years, and seems likely to continue during the present year, it may be interesting for a moment to consider how far the facts brought out in these tables correspond to what has been suggested from time to time as the reason for the rise and fall in emigration itself. What I have pointed out in former reports is that to all appearance emigration, as a rule, does not take place in times of the greatest dulness of trade, but rather in times of prosperity immediately succeeding a period of dulness, and that it begins to fall off again when depression returns. The reason may, perhaps, be that as the chief emigration takes place to the United States, and as the largest fluctuations are in the movements to and from the United States, then it is the state of trade there which determines the strength of the current of emigration from Europe at particular times. That state of trade, whether prosperous or the reverse, is likely enough to correspond with the state of trade in Europe itself. This being so it would follow that emigration would take place from Europe when times are good, and not when times are dull. The reason, however, would be not that prosperity causes the emigration or dulness the decline of the emigration, but that it is the prosperity or dulness of trade in the United States, and in other countries to which emigrants proceed, which is the real operative cause. At any rate, the facts of the present time quite bear out this view. Trade has been depressed in the United States during the last two years, and is more depressed now than it was at the beginning of the period, and it is during these two years that the emigration from Europe has been declining, and that the immigration into Europe has been increasing, that immigration, it may be observed, being greatest from the United States. It is also plain that emigrants, consisting principally of labourers, are hardly likely to proceed to new countries in the years when there is no demand for them, and when, on the contrary, there is a great abundance of labour in these new countries. To some extent, also, I should say that the figures as to emigration are affected by the occurrence of years of prosperity in this way, that in the earlier years of prosperity, a considerable lending of capital from old to new countries goes on, and this lending of capital promotes emigration from the old countries to the new, helping to give greater employment for labour in the new countries than there would otherwise be. In this way an appearance of probability is given to the assumption that prosperity is the cause of emigration. There is no doubt, however, that prosperity in the way described is only a contributory cause. The main cause is the great demand for labour in new countries when times are

good there, from whatever cause, and it is only a coincidence that times are good in these countries when they happen to be good in the old countries themselves. It would be reasonable to anticipate that the moment prosperity returns to the United States the tide of emigration to that country will again begin to flow.

"One of the best proofs of the volume of emigration being related to the state of affairs in the United States is to be found in the figures as to immigration when an account is taken of the countries from which the immigrants come. Such an account is presented in the following table:—

Number of Immigrants of British and Irish Origin that Landed in the United Kingdom from Foreign Countries in each of the Years 1877 *to* 1884.

	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.
United States	44,878	34,040	20,048	26,518	29,781	28,468	46,703	61,466
British N. America	5,687	6,204	3,497	4,688	5,761	6,097	7,021	8,861
Australasia	4,637	4,207	4,967	5,910	5,877	6,871	6,844	8,312
Other places	8,688	10,493	9,424	9,891	11,288	13,275	13,236	12,717
Total	63,890	54,944	37,936	47,007	52,707	54,711	73,804	91,356

"From this table it will be seen, and it may usefully be compared with the tables of emigration, that the chief fluctuating element as regards immigration is in the numbers coming from the United States. In 1877 these numbers were 44,000, falling to 20,000 in 1879; since that date there has been a gradual increase, until last year, the year of largest immigration of all, when the total was 61,000, or two-thirds of the whole immigration. No other destination shows changes at all corresponding, the difference in the immigration from all other places between 1879, the least year, and 1884, the highest year, being little more than 12,000. If it be true, then, that a large increase of immigration into this country means a decline in the emigration itself, and that the emigration in turn is determined by the want of employment in the country from which the immigrants return, then it must be evident that it is the state of affairs in the United States which is now diminishing the volume of emigration. Not only are the emigrants deterred from going to the United States by the state of the labour market there, but many people who have gone to that country are returning because they can find no employment at the present time.

"The facts as to the immigration of persons of foreign origin are entirely in harmony with those in the above table, but it would be needless to encumber this report with too many figures.

"Reference has frequently been made in these reports to the peculiar character of the emigration to Australasia, which varies not quite in accordance with the emigration to the United States, and appears to be less exclusively determined by natural causes. The emigration to Australasia last year was much smaller than it

had been in 1883, but still a large figure; and but for the special emigration to Australasia neither would there have been the large increase of British emigration which took place in 1883 from the United Kingdom, nor would the figure of emigration last year, small as it is by comparison, have been so large in reality.

"The following table, in continuation of a similar table in former reports, brings out these facts very clearly:—

Destinations of Excess of Emigrants over Immigrants among Persons of British and Irish Origin only in the Undermentioned Years.

Country of Emigration and Immigration.	Excess of Emigrants in								
	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.
United States.....	− 143*	603	20,654	71,758	140,052	146,323	153,435	144,870	93,814
British N. America	2,706	2,033	4,448	14,455	16,214	18,151	34,344	37,164	22,273
Australasia	29,617	25,501	32,272	35,992	18,274	16,805	30,418	64,420	35,943
All other parts	5,885	3,168	584	4,133	5,995	9,016	6,458	− 140*	− 1,207*
Total	38,065	31,305	57,958	126,338	180,535	190,295	224,655	246,314	150,823

* Excess of immigrants.

"This table requires no comment. It is quite evident that the large increase of emigration to Australasia in 1883 was of an exceptional character, and that the large amounts in the years 1882, 1883, and 1884 occurred at a time when, as regards the latter years, at least, the tendency was for emigration to decline.

"The following small table also continues a table in former reports, showing the number of cabin and steerage passengers included in the tables of emigration. It is observable that along with the decline in steerage passengers which occurred last year, corresponding to the decline in emigration itself, there was an increase of cabin passengers, the figure of 57,403 for the latter being the largest on record:—

Numbers of Cabin and Steerage Passengers leaving the United Kingdom for Places out of Europe, in each of the Years from 1876 *to* 1884 *inclusive.*

Years.	Cabin Passengers.	Steerage Passengers.	Total.
1876	41,900	96,322	138,222
'77	37,147	82,824	119,971
'78	43,168	104,495	147,663
'79	43,928	173,235	217,163
'80	50,734	281,560	332,294
'81	54,270	338,244	392,514
'82	56,739	356,549	413,288
'83	55,840	341,317	397,157
'84	57,403	246,498	303,901

"Another fact which has frequently been noticed is the different

proportion of English, Scotch, and Irish persons in the total of emigration of persons belonging to the United Kingdom as compared with what the proportions used to be. Since a separate record has been obtained of the emigration of persons belonging to the United Kingdom, as distinguished from foreigners, viz., since 1853, the proportion of the Irish emigration has fallen from about 60 to 30 per cent. of the total, an increase to 41 per cent. in 1880 not having been maintained; on the other hand, the English proportion has risen from 30 to 61 per cent., that of Scotland remaining throughout the period the same. The following is the statement, continuing a similar statement in former reports:—

Statement of the Number and Proportion of Persons of English, Scotch, and Irish Birth respectively, in the Total Emigration of Persons of British Origin at different Periods.

Period.	English.		Scotch.		Irish.		Total.
	Number.	Per-centage of Total.	Number.	Per-centage of Total.	Number.	Per-centage of Total.	
Three yrs. 1853-55	211,013	30	62,514	9	421,672	61	695,199
Five years '56-60	243,409	39	59,016	10	315,059	51	617,484
,, '61-65	236,838	33	62,461	9	418,497	58	717,796
,, '66-70	368,327	43	85,621	10	400,085	47	854,033
,, '71-75	545,015	56	95,055	10	329,467	34	969,537
Year 1876	73,396	67	10,097	9	25,976	24	109,469
,, '77	63,711	67	8,653	9	22,831	24	95,195
,, '78	72,323	64	11,087	10	29,492	26	112,902
,, '79	104,275	64	18,703	11	41,296	25	164,274
,, '80	111,845	49	22,056	10	93,641	41	227,542
,, '81	139,976	58	26,826	11	76,200	31	243,002
,, '82	162,992	58	32,242	12	84,132	30	279,366
,, '83	183,236	57	31,139	10	105,743	33	320,118
,, '84	147,660	61	21,953	9	72,566	30	242,179

"Comparing the above statement with the comparative tables annexed, and with the table showing the immigrants of British and Irish origin landing in the United Kingdom from different foreign countries, it would appear that the change in the character of the emigration from the United Kingdom is accompanied, to some extent, by a change in the destinations of the emigrants. In the years from 1861 to 1870, the annual average emigration of persons of British origin was about 157,000, of which 81,000 were Irish, and of these Irish emigrants the number proceeding to the United States was 69,000, while the number of English and Scotch proceeding to the same destination was 44,000. In 1883, however, the latest maximum year, the total emigration was 320,000, and of this only 105,000, or less than one-third, were Irish, so that although 83,000 of this number of 105,000 proceeded to the United States, the proportion proceeding to that destination was altogether not so large as it had been in the years when the Irish element preponderated. The proportion of English emigrants

now proceeding to the United States appears to be not four-fifths, as is the case with the Irish element, but only about one-half, and it is the same with the Scotch emigration. In 1884 the proportion of English and Scotch emigrants proceeding to the United States was somewhat larger, but still nothing like the proportion in which the Irish emigration has that country for its destination.

"In former reports attention was drawn at some length to certain differences in the character of English as distinguished from Irish emigration, particularly the larger proportion of single female adult emigrants, and the smaller proportion of children in the emigration of Irish persons than in that of English or Scotch. This difference in the character of the emigration continues noticeable; and without further comment, I have again to draw attention to the table appended, which brings out the facts, merely referring to the observations on the subject in former reports.

"The usual tables are added, showing in detail the sex, age, condition, and occupations of the emigrants; the numbers departing from each of the ports of the United Kingdom; the particulars of detention money recovered by emigration officers; and the amount of remittances by settlers in the United States and British North America to friends at home; besides comparative tables. With regard to these remittances, however, I have again to repeat the remark of former reports, that the data are necessarily very incomplete."

VIII.—*The Trade of Marseilles.* *By* Archibald J. Dunn, Esq.

For many years past the reports of the Chamber of Commerce of Marseilles have abounded in lamentations over the extraordinary falling off in certain sections of her trade, and in vehement appeals to the Minister of Commerce to ameliorate her unhappy position.

As both the facts of this diminution and its causes have a considerable bearing upon the trade of England and our English colonies with Marseilles, it has occurred to me that a few statistics on the subject may be of interest.

The French Government appears to be fully alive to the gravity of the situation of French commerce generally, and of the necessity of doing something to aid its development. In February, 1884, it sent Baron Michel, an officer of the French Navy, to our Australian colonies in order to study the condition of business there, and to report upon the best means of stimulating direct trade between those colonies and France. His report has not been published, but I am informed that his recommendations may be classed under two heads: that French manufacturers should establish agencies in Melbourne, Sydney, and Auckland to push the sale of French goods; and that public sales of colonial produce should be established at the principal ports of France, upon the model of the public sales of London and Liverpool.

Now the only ports which are likely to benefit much by an increase in the volume of trade with our Australian colonies and the East, are Havre and Marseilles. This arises of course from the fact that these ports are the nearest points, geographically speaking, to the great manufacturing centres which deal with the raw material imported by sea. Havre is better situated in respect to the markets of the north, such as Rouen, Elbœuf, Amiens, Lille, Roubaix, &c., while Marseilles is the nearest port to the manufacturing districts in the valleys of the Rhone, Loire, and Saône, and to those on the Swiss and German frontiers. The district including the valleys of the Rhone and Loire has often been called the Lancashire of France, on account of the vast number of its factories and its extensive coal fields. Indeed, the produce of this district alone amounts in value to more than one-half of the total manufactures of France.

It is clear that the port of arrival which a merchant would choose for raw material intended for this district would be, *cæteris paribus*, Marseilles; and in fact, until recent years, such has been the case. Why it is no longer so it is the object of the present paper to show.

Of all the ports in the Mediterranean, Marseilles enjoys the highest natural advantages. Geographically her position is unrivalled for commercial purposes. She stands with her capacious harbours facing across the sea the long stretch of the African coast, once the granary of the world; and the Mediterranean, which has been from the earliest historic times, the highway from Western Europe to the East, lies at her feet. At her back are the most fertile provinces of France, and behind them the great and busy markets of central Europe, largely dependent upon her for their access to the outer world. At her right hand and at her left, within easy sailing distance, are Spain and Italy, whose shipping throngs her port and contributes largely to her revenue. Beside her the Rhone, the only navigable river of France which flows into the Mediterranean, offers cheap and easy transit for the lower priced and heavier classes of goods to the very heart of France and surrounding countries. With such advantages as these, one would have thought that the old Phocean city, as she loves to style herself, with her three thousand years, as she boasts, of commercial history, would have rivalled London in wealth and Liverpool in commerce. That she has not yet attained this position is owing in great part to one of the most conspicuous deficiencies in the character of the French people, a singular want of foresight and initiative.

And thus Marseilles, with all her natural advantages, through her shortsighted policy of grasping at large present profits, has let slip many golden opportunities which her Italian rivals and competitors have not been slow to seize. The opening of the Suez Canal has once more diverted the current of the India and China trade with the West into something like its old channel through the Mediterranean, and Marseilles might reasonably have hoped to profit by it, as the great Italian republics of the middle ages did after the fall of Byzantium. Venice and Genoa, Florence and

Pisa grew rich and powerful by the Oriental trade, as England, Holland, and Portugal did after the discovery of the sea route to India and China. And now we find that Genoa and Trieste, through their connection with the Italian and Austrian railways and the opening of the St. Gothard tunnel, have already succeeded in securing a large part of the transit trade to central Europe, which was formerly the monopoly of Marseilles and the Paris, Lyons, and Mediterranean Railway. That Marseilles has profited in a certain degree by this change in the current of commerce is proved by the published statistics of her import and export trade, which amounted in 1877 to 4,919,764 tons, while in 1882 it had increased to 6,661,965 tons. That it had not attained double that amount is owing chiefly to the obstinate adherence of the city and her railway to their exorbitant charges and rates, which are driving trade away from her to even unexpected ports. In illustration of this the Report of the *Chambre Syndicale de Marseille* for 1882 says: "Freights from Odessa to Antwerp rarely exceed those from Odessa to Marseilles, and the difference, when there is any, is never more than 5 frs. per ton. . . . Bâle, which is the central corn market of Switzerland, is only 34 kilometres nearer to Antwerp than to Marseilles, and yet there is a difference in the cost of carriage, &c., between the two routes of 12 frs. 97 cents. per ton (10*s.* 3*d.*) in favour of Antwerp."

But it is upon her own great industries and manufactures that Marseilles must always chiefly rely for her future prosperity.

Foremost among these is the grain trade, supplying the enormous factories for the preparation of farinaceous foods for which Marseilles is famous. Some idea of the magnitude of this trade may be formed from the following statistics, kindly furnished to me by the Director of the Agence Havas at Marseilles. In 1877 the imports of corn chiefly for consumption at Marseilles amounted to 2,538,088 quintals, while for 1883 they amounted to 6,475,440 quintals. (A quintal = 220½ lbs.)

As compared with the total imports of corn by the whole of France, those of Marseilles were equal, according to the report of the Chamber of Commerce in 1880, to 22½ per cent., in 1881 to 29 per cent., and in 1882 to 34 per cent. It is interesting to learn that among these the imports from India amounted in 1880 to 359,764 quintals, in 1881 to 1,233,521 quintals, and in 1882 to 1,642,270 quintals. And the remark is made that "the grain trade with India is attaining every year a greater development; in hard wheats those from India occupy the first rank among the imports; these wheats are taking the place of those of Africa and Russia."

The manufacture of *semoules* (semolina), which is now so important an industry, is of comparatively recent growth. Thirty years ago the factories then existing consumed annually 25,000 hectolitres of wheat; the consumption is now 1,296,300 hectolitres. The exports of semolina amounted to 11,908,048 kilogrammes in 1882, being an increase of 7,091,937 kilogrammes over those of 1881. The greater portion of these were shipped to South American ports, and it is evident that in this particular trade the

Marseilles houses are beating their Italian competitors in those markets. But I am informed by a correspondent at Marseilles that the extra duty lately imposed by the French Government upon foreign wheat will absorb the whole of the profit which the Marseilles *minotier* had in competition with his Italian rivals, and that it is thought that the valuable South American trade will be lost by France and regained by Italy.

The report of the Chamber of Commerce speaks in melancholy terms of the depressed condition of the wool trade. The sales of wool had sunk from 110,200 bales in 1881, to 75,397 bales in 1882. This ominous reduction is explained as follows: "In many kinds of manufacture Levant wools have been superseded by Australian 'crossed' wools, and as these latter have been shipped direct to London, Marseilles trade has suffered accordingly. We must consider the best means of attracting Australian wool to us, and must not lose sight of the fact that Marseilles, *owing to her geographical position*, ought to be the wool market for the South of France, Italy, and Spain. We should also supply Switzerland, Alsace, and the great manufacturing districts of the North, especially Roubaix and Turcoing. But to attain this end it is necessary that the Messageries Company, and the Paris, Lyons, and Mediterranean Railway should assist us; the former by fixing lower freights for Marseilles than for London, the latter by lowering its rates of carriage." But these highly protected companies have hitherto turned a deaf ear to these touching appeals. The truth is that the commerce of Marseilles is being strangled by the short-sighted greediness of these two great monopolies and that of its own municipality.

As for the much coveted Australian trade, it is not to be won by blandishments. Produce will always seek the most profitable and convenient market, and shipowners will always charge higher freights to ports which cannot supply them with return cargoes. As we shall see later on, the dearth of outward freight is one of the most serious deficiencies of Marseilles.

One of the most thriving manufactures of the city is that of soap. There are 90 factories which produced in 1882 94,000,000 kilogrammes of soap, of which 22,000,000 kilogrammes were exported by sea, and 66,255,000 kilogrammes were forwarded by rail to European markets. It is a prosperous and profitable business, affording a great stimulus to the oil trade, which has always been an important one in Marseilles. In 1882 the oil mills crushed 309,613,000 kilogrammes of oil seeds and nuts, the greater part of which were imported from the West Coast of Africa and from British possessions. The report, while noting that there had been a considerable increase in the importation of *arachides* (ground-nuts), says: "It is necessary to state that a large proportion of African produce shows a tendency to seek other ports, those of Bordeaux, Nantes, and Dunkirk, chiefly profiting by the change . . . We remark with regret this constantly increasing competition with the trade of Marseilles; nothing can tend to develop this trade but the lowering of tariffs on the different railways for the carriage of oil. These advantages, which we have been asking for for many

years, can alone enable us to compete successfully with foreign nations, who are rivalling us in our own markets."

The devastations of the *Phylloxera* in the vineyards of late years have been ruinous to the vineyards of France, and notwithstanding the great number of "infallible cures" which are constantly being invented, there is but little signs of improvement.

The total production of wine in the whole of France which amounted according to official statistics to 56,405,363 hectolitres in 1877, had decreased to 30,886,352 hectolitres in 1882. Nevertheless the wine *manufacturers* of France have too good a trade with the outer world, and their wines have too great a reputation to allow it to slip away from them by reason of any failure in French vineyards, for they have long since made *coupage* or "blending" one of the fine arts, and they have brought it to the highest possible perfection. They have called in the produce of foreign vineyards to redress the balance of their own. Accordingly we find that the arrivals of foreign wines in cask at the port of Marseilles alone show the following startling figures: In 1877 the imports of wine amounted to 4,952,738 litres, while in 1882 they attained no less than 49,873,930 litres. It is interesting to observe that of these imports, 37,740,195 litres consisted of the light country wines of Spain, 8,094,986 litres of those of Italy, and 2,139,238 came from Greece. The greater portion of these wines were used for "blending," but large quantities were sold in the shops for popular use without further adulteration than is implied by "watering." Another great help to this interesting and profitable "manufacture" is derived from the use of raisins and currants, the imports of which had risen from 9,290,276 kilogrammes in 1877 to 37,075,065 kilogrammes in 1882. Of these last 17,623,268 kilogrammes came from Greece, 16,699,420 from Turkey, and 1,798,719 from Spain. We have here an explanation of a phenomenon which has puzzled many people, how the French exports of wine maintained a growing annual increase concurrently with a constantly decreasing production by French vineyards.

The report points out with undisguised alarm the continuous increase in the imports of English coal. It is decidedly remarkable, as the following figures show: In 1880 the arrivals of English coals amounted to 166,000 tons; in 1881 to 217,000 tons; and in 1882 to 282,000 tons; an increase within two years of no less than 116,000 tons. The superiority of English steam coal to that of France has no doubt much to do with this large annual increase, but much also is due to the cheapness of sea freight as compared with the railway carriage over the lines of the Paris, Lyons, and Mediterranean Railway. This amounts to eight centimes per ton per kilometre traversed, in addition to the heavy charges at Marseilles for handling, cartage, &c.

The large number of "*Etangs*" or salt lakes and salt marshes in the delta of the Rhone, and of the salt works which surround them, render the salt trade of the south of France one of great value, as furnishing an important article of export freight to foreign vessels. But the low price of the commodity makes it unable to bear the heavy charges which Marseilles imposes. Hence

we find the exports of salt rapidly declining at Marseilles, while they increase at Port de Bouc, a few miles distant. In fact in 1882 the export trade at Marseilles had sunk to 12,000 tons, while at Port de Bouc they amounted to 30,000 tons, an increase of 16,000 tons over 1881. Considering the large number of vessels which are compelled to leave Marseilles in ballast through lack of cargo, this is a deplorable state of affairs.

We now reach one of the principal factors in the prosperity of Marseilles, inasmuch as it affects all her industries, and has a most important bearing upon the present position and future prospects of French commerce. I allude to the shipping trade. Marseilles deprived of her shipping would soon sink to the rank of a fifth rate French town. Her trade and manufacturers would speedily dwindle, and finally desert her altogether for more favoured localities where the raw material necessary for their existence could be delivered at lower prices, and from which their products could be carried to suitable markets at lower rates. Throughout the long period of her commercial existence, Marseilles has owed her prosperity to her shipping and her intercourse with foreign nations by sea.

It is only during the present century that the manufactures and commerce of France have attained any great importance. Within the past fifty years under the rule of a Citizen King, two Republics, and an Emperor, more attention has been paid by the French Government to the development of French commerce than at any previous period. It has encouraged the construction of railways, canals, harbours, and public works of all kinds, the establishment of factories, &c., &c., and Marseilles has profited by this policy more than any other port.

In 1882 no less than 9,203 vessels of all kinds entered the harbours of Marseilles, their aggregate measurement being 4,060,991 tons, an increase, as compared with the previous year, of 284,723 tons. Analysing these figures, we find that 849 were "*long cours*" (vessels from distant ports), and 8,329 "*cabotage*" (coasting vessels), the latter including the large number of Italian, Greek, and Spanish vessels which live on the international trade. The tonnage of vessels under the French flag amounted to 2,199,622 tons, and under foreign flags to 1,090,760 tons. It is to be noted that 2,315 of these vessels, or 27 per cent., left the port in ballast owing to want of freight.

But the good people of Marseilles have at length, though tardily, awakened to the perilous condition of their shipping trade, and are making some endeavours to increase and stimulate it. Unwilling to reduce their beloved port and harbour dues by so much as a centime, if this can be by any means avoided, they are commencing by experiments abroad. The report of the *Chambre Syndicale de Marseille* for 1883 mentioned that it had already induced several houses of Marseilles to send some consignments of their goods to a Frenchman residing in Melbourne, who had promised to push their sale in Australia. It goes on to say: "We are also seeking for numerous adhesions to this enterprise, as we wish to give it a character of general usefulness. Our

chief object is to stimulate the consumption of French goods in Australia, where they have been hitherto but little known; but we also wish to attract for the benefit of Marseilles some of the exports of that rich country, which has hardly any relations with France." *The Compagnie des Docks et Entrepôts de Marseille* also has just taken a step, the results of which ought to exert a favourable influence upon the trade of the port. They have established upon their premises the system of periodical sales of general produce imported, which has been so beneficial to the trade of London and Liverpool. This is certainly a step in the right direction, but it is only one of many which the Marseillais must take if they desire to emulate the attractiveness of the London or Liverpool markets. First of all, the charges for landing and warehousing of goods must be materially reduced before the produce of our Australian colonies is consigned to Marseilles to any important extent. Next it will be necessary to establish direct banking relations between Marseilles and the chief Australian ports, as is done in England by the colonial banking companies. But lastly, and more important than all, measures must be taken to provide sufficient return freights for the vessels carrying the produce to Marseilles. In a word, a regular current of direct exchange must be established.

But the same causes which have so much injured the trade of Marseilles, have been still more hurtful to the manufacturing towns in southern and central France, which depend largely for their success upon the cheapness of the raw material which they import. During many years past the *Conseils Généraux* of sixteen departments of southern and central France, and the Chambers of Commerce of Lyons, St. Étienne, Nancy, Châlons-sur-Saône, Autun, Louhans, Avignon, Algiers, and Constantine, &c., &c., have repeatedly memorialised the Government to find some remedy for the evil, urging that the municipality of Marseilles, and the directors of the Paris, Lyons, and Mediterranean Railway, should be compelled to reduce their charges and rates upon raw material imported. However, no Government has ever felt itself strong enough to brave the animosity of the powerful interests of Marseilles, and therefore no attempts have been made in this direction.

But Napoleon III hit upon a plan which should alleviate the disadvantages referred to, in so far at least as those departments were concerned, although by doing so he was striking a death-blow to the future commerce of Marseilles as a port of entry. He determined to open to foreign navigation the greatest river of France, the Rhône. Even in the days of Strabo that mighty river was closed to sea-going vessels by the formidable bar which has always existed at its mouth. At the present day the depth of water on the bar does not exceed one metre, thus forming an insuperable obstacle to navigation. At a point about two kilometres above the mouth, where the river is 15 metres in depth, the Emperor ordered the construction, at Government expense, of a canal to connect the Rhône with the Golfe de Fos, a large and deep bay situated at the head of the Gulf of Lyons, known to the sailors of the Mediterranean as the *Anse de Répos* or

"Harbour of Refuge." The canal was duly constructed, and cost, including the immense quays, basin, &c., on the Rhône, and a lighthouse at the sea entrance, 25,000,000 frs. The canal is 3,500 metres in length, 64 metres in breadth, and 6 metres in depth, thus giving easy access to vessels drawing 20 feet of water. It was finished and opened in 1870; but strangely enough, for many years little or no use was made of it. It was only in 1880 that the *Société Générale de Navigation du Rhône*, which had had for many years a service of cargo boats between Lyons and Arles, decided upon extending their service to St. Louis, and from that time the commerce of the new port has continued to increase in a very remarkable manner. In 1880 the total tonnage of the port was about 50,000 tons. In 1883 it exceeded 350,000 tons, and in 1884 it had increased to 500,000 tons! It is a singular illustration of the want of initiative in the French people, that the great manufacturing towns which are situated close to the Rhône and Loire, and to which cheapness of raw material is so important, should have waited fourteen years to utilise the cheap and magnificent waterway provided for them by the Government; and this after having so long and so loudly clamoured for it.

Our colonial produce, which is so much appreciated by the manufacturers of central and southern France, will no doubt soon find its way to them by the Rhône instead of by the railway from Marseilles.

The Credit Mobilier of Paris is now constructing a short line of railway to connect Port St. Louis with the Paris, Lyons, and Mediterranean system at Arles, thus effecting a saving of 51 kilometres as compared with Marseilles for goods and passengers destined for stations north of Arles, and at the same time altogether escaping the excessive charges of Marseilles, for St. Louis is a free port.

Again, St. Louis can offer to shipping visiting her port advantages which must ever be impossible at Marseilles. Cargoes of salt can be obtained in almost any quantity from the large salt works in the neighbouring Camargue; stone of the finest quality from the celebrated quarries of Beaucaire, Saint Paul-trois-Chateaux, &c.; hydraulic cement for harbour works from Theil, Ain, and Isère; pig and bar iron from Gard, Aveyron, St. Étienne, &c.; rails, machinery, coals, and implements of all sorts from Creuzot and Besseiges, Rive de Gier, Alais, &c.; timber and staves from Burgundy and the Jura, &c., &c.

I have endeavoured to show in this paper that the international trade of Marseilles has been for many years in a declining condition; that the causes of this decline may be traced to the excessive port and harbour dues of Marseilles herself, and to the high rates for goods traffic of the Paris, Lyons, and Mediterranean Railway. It is hopeless to expect any reduction in these charges, for the railway is a monopoly, and the docks and harbour works of Marseilles have been so costly, that it would be ruinous to materially reduce the dues.

It seems evident to me, therefore, that the international trade of Marseilles must soon desert her altogether in favour of cheaper

ports. Her only hope of retaining command of the trade would be for her merchants to adopt the Port of Louis de Rhône for certain classes of her external commerce, as Nantes adopted the Port of St. Nazaire under similar circumstances, after many years of fruitless opposition.

Failing this, I feel convinced that within a very few years, the commerce of Marseilles with foreign countries will dwindle down to that which is demanded by the requirements of her own factories.

This would be indeed a sad ending to the long and brilliant career of the proud Massilia, the queen city of the Mediterranean.

IX.—*Statistics of Murder in the United States.*

The Editor has received the following interesting communication from a gentleman in Boston, Mass., U.S.A., who is entitled to speak with authority on the subject :—

To the Editor of the *Journal of the Statistical Society.*

Sir,—I read with interest an article in the London *Spectator* of 5th April upon "The Riots in Cincinnati," and without asking an opportunity to discuss the general statements made in reference to the administration of justice in the United States "fifteen years" ago by an unnamed "leading American Statesman," I hope you will permit me to point out that conclusions drawn from the statistics there quoted are as inapplicable in regard to large portions of this country, as deductions from the total number of homicides in the English empire, including Ireland, India, and Manitoba would be to England itself or one of its counties.

The writer says, in a connection which applies to all the States, that "murders have multiplied till a general sense of insecurity has penetrated downwards even to the classes living by labour;" and when he adds that "of course the degree of the evil varies in every State," this must imply that the evil varies only in degree.

Mr. Mulhall, whom he quotes as authority, deserves credit for attempting his "Dictionary of Statistics," but I may be excused for declining to accept him as a final authority. He states, for example (p. 381), the total number of persons killed or wounded on railways in the United States at 8,215, according to the United States census of 1880, but he gives the number of killed as 2,349, wounded as 5,866; while in the United States census (Compendium, p. 1267) they are stated at 2,541 and 5,674. I do not find in his book the facts stated in the article in the form in which they are there quoted. Murder he says is a cause of death in England to 237 persons, in the United States to 820 persons per 10 millions.

The writer does not refer to any page of Mulhall or specify any

year as the date of these figures; Mr. Mulhall however (p. 324) gives the—

	Annual Murders.	Annual Deaths and Murders per 10,000 Deaths.	
England	377	531,000	7·1
United States.....	2,057	980,000	21·5

and this seems to correspond with the general statements of the "Spectator" as to the comparative numbers of 3 to 1. But Mr. Mulhall evidently means homicides, not murders. (Compare his record of Coroners' Inquests, p. 112.) And by the census of 1880 the total number of deaths in the United States is given (p. 1705 of the Compendium) as 756,893, not 980,000. Dr. John S. Billings, the official under whose direction the mortality statistics were compiled, considers this number too small, and concludes that "the actual mortality for the whole country during the census year was not less than 17 nor greater than 19 per 1,000." Taking the highest rate, the total for a population of 50,155,783 would still be considerably less than 980,000.

The Compendium reports (p. 1707) 733,840 deaths in which the causes are distinguished, and as due to—

Homicide (p. 1709) 1,336
Infanticide 40
} or 1,376 in all.

This document therefore does not seem to be the source of Mr. Mulhall's 980,000 deaths and 2,057 murders.

But a comparison between England and Wales *ex*cluding Ireland, or Australia and the United States *in*cluding the Southern States such as Kentucky, Texas, Mississippi and California, with all the newly settled territories and their lawless population as the foundation of conclusions in regard to the country in general is inappropriate and misleading.

According to *Whitaker's Almanack* (for 1881, p. 351), there were in the year 1879 in England and Wales verdicts on coroners' inquests of—

Murder in..... 153 cases.
Manslaughter in ..... 149 ,,
Or of homicide in ..... 302 ,,

besides 8 of justifiable homicide.

Taking the population at the census of 1881, or about 26 millions (25,968,286, Whitaker, 1882, p. 446).

This is a rate of about 1 to 86,000. But in Ireland, with a population of 5,159,839, there were in 1880 among the indictable offences reported (1882, p. 392) 42 cases of murder and 80 of manslaughter, or 122 homicides, that is to say, about one to every 42,250, besides 242 attempts to murder or maimings. These statistics of indictable offences also show a larger number in England in 1879 than the inquests, since the cases of murder are stated (1881, p. 352) at 208, of manslaughter, woundings, &c., at

988, without distinguishing the former, and the attempts to murder at 60. If the cases of manslaughter included in this number of 988 were only equal to those of murder we should have 416 in 1879.

In Massachusetts in 1880, with a population of 1,783,085, the census reports 10 homicides, or say 1 to 178,308 persons. In Ohio, with a population (1880) of 3,198,062, there were, according to the local or State statistics in 1881, 107 (by the United States' census, much less), in 1882, 73, or roughly—

1 in 30,000 in 1881.
1 „ 43,800 „ '82.

In these years (according to Whitaker) in 1881 (Whitaker, for 1883, p. 418) there were among the indictable offences in England and Wales 167 cases of murder and 251 of manslaughter, or 418 homicides; in 1882 (1884, p. 409) 90 cases of murder of persons over 1 year, 82 of infants under 1 year, and 242 of manslaughter, or in all 414 homicides, besides 67 attempts to murder.

With a population of 26 millions we have therefore about 1 homicide to 63,000 persons. Averaging the two years in Ohio and England the proportion in the former is not twice, much less three times, as many as in England and Wales, exclusive of Ireland. But if we compare the census of *New* England for 1880 with the above figures for *Old* England, we find that the proportion of homicides to deaths stated by the "Spectator" are reversed, or if I may say so, more than reversed in the proportion of homicides to population.

But the most significant fact developed by comparing the number of homicides in the different States of the Union does not seem to have attracted the attention of the writer of the article.

I refer to the great excess in the old slave States.

Mr. H. V. Redfield, in a remarkable book entitled *Homicides North and South* (J. B. Lippincott and Co., Philadelphia, 1880), states (p. 10) that "in the late slave States the number of homicides in proportion to population is far in excess of the rate ever known in the Northern States, or in England for the past four hundred and fifty years," and even claims that the number of homicides in the Southern States since the war reaches 40,000.

In Ohio he gives the annual average of murders for twenty years at 78, and attributes the large number of 116 in the year, including the labour and railroad strikes of 1877, to those disturbances.

By statistics furnished me from the office of the Secretary of State I learn that the numbers in 1880-83 were as follows:—

1880	118
'81	107
'82	73
'83	85
	4)383
Or an increased average of about	96

But without pressing upon your columns extracts from Mr. Redfield, let me refer to the Compendium of the census of 1880, published since his book appeared. The total number of homicides there reported, as above stated, is 1,376; of these 227 were in the territories (and district of Columbia), containing a population of 784,443 (181, including a large number unknown *killed by Indians*, in the single territory of New Mexico). There remain for a population in the United States proper of 49,371,340, 1,149 homicides, or about 1 to 43,000 persons. I do not believe indeed that this correctly represents the full number, or contend that the actual number *in the whole country* may not have been as large or, judging from Mr. Redfield's statements, larger than that given by Mulhall.

I now refer to the reported figures for the purposes of comparison among the States, assuming also that the returns are more accurate and complete in the Northern States.

Dividing the States into groups, we have:—

In Six New England (formerly Free) States.

State.	Population.	Total Number of Homicides.	Being One to
Maine	648,936	3	—
New Hampshire	346,991	3	—
Massachusetts	1,783,085	10	—
Vermont	332,286	—	—
Rhode Island	276,531	—	—
Connecticut	622,700	3	—
	4,010,529	19	about 211,000

Five Middle (formerly Free) States (but including Delaware, nominally Slave, and West Virginia, taken during the War from Virginia.

New York	5,082,871	74	—
Delaware	146,608	—	—
New Jersey	1,131,116	6	—
Pennsylvania	4,282,891	40	—
West Virginia	618,457	9	—
Total	11,261,943	129	87,300

Four Western (formerly Free).

State.	Population.	Total Number of Homicides.	Being One to
Ohio	3,198,062	50	—
Illinois	3,077,871	33	—
Indiana	1,978,301	45	—
Kansas	996,096	35	—
Total	9,250,330	163	56,800

Nine North-Western and Pacific (formerly Free).

Iowa	1,624,615	20	—
Colorado	194,327	14	—
Michigan	1,636,937	28	—
Minnesota	780,773	14	—
Nebraska	452,402	14	—
Nevada	62,266	4	—
Oregon	174,768	6	—
Wisconsin	1,315,497	10	—
California	864,694	69	—
Total	7,106,279	179	39,700

Seven South-Eastern (formerly Slave).

Maryland	934,943	6	—
Virginia	1,512,565	35	—
North Carolina	1,399,750	23	—
South „	995,577	48	—
Georgia	1,542,180	63	—
Florida	269,493	9	—
Alabama	1,262,505	38	—
Total	7,917,013	222	about 35,700

Seven South-Western (formerly Slave).

Mississippi	1,131,597	59	—
Louisiana	939,946	56	—
Texas	1,591,749	133	—
Arkansas	802,525	21	—
Kentucky	1,648,690	59	—
Tennessee	1,542,359	39	—
Missouri	2,168,380	68	—
Total	9,825,246	435	22,600

It may be noted that the fourth group is composed mostly of what may be called *new* States, the population in which is less orderly than in the older communities.

Delaware was nominally a slave State, and West Virginia part of Virginia, a former slave State, but the number of slaves in either has not been large, and I have therefore classed them as free States.

Condensing this statement, we have the following table:—

	Total Population.	Total Number of Homicides in 1880 by the Census.	Being One to about
Six New England States (formerly free)	4,010,529	19	211,000
Five Middle (formerly free) including Delaware, nominally slave, and West Virginia, taken during the war from Virginia)	11,261,943	129	87,300
Four Western (formerly free)	9,250,330	163	56,800
Nine North-Western and Pacific (formerly free)	7,106,279	179	39,700
Seven South-Eastern (formerly slave)	7,917,013	222	35,700
Seven South-Western (formerly slave)	9,825,246	435	22,600

I do not know from what source the statement in the *Spectator* that last year (1883) there were 1,500 convictions of murder in the United States and only 93 executions was derived.

We do know on high official authority that in Massachussetts in the twenty-two years from 1860-81, both inclusive, 212 persons have been brought before its highest courts on indictments for murder, 28 were convicted of murder in the first degree, for which only the punishment is death, 15 of these were executed, and 1 committed suicide; a small proportion indeed, but much greater than 93 to 15,000.

The lesson of these statistics perhaps, and of the comparison with those of England and Ireland, is that general deductions as to the condition of a great country or the causes of such events as the Cincinnati Riots cannot be safely drawn from them.

E. S. H.

Boston, Mass., U.S.A., March, 1885.

X.—*The Industrial Remuneration Conference.*

With reference to a notice that appeared in the last number of the *Journal* (p. 694 of vol. xlvii for 1884), the President of the Society stated at the Ordinary Meeting on the 17th February "that the Industrial Conference, of which he had spoken at the last meeting, assembled at the end of January, sat for three days, and accomplished a very satisfactory and useful work. It would be remembered that the Trustees of the Fund requested the Council of the Statistical Society to name seven members for the purpose of joining them in arranging the Conference." The Report of the Conference, including the papers and discussion, will be published shortly by Messrs. Cassell and Co.; the price of the volume will be 2*s.* 6*d.*

XI.—*Additions to the Library.*

Additions to the Library during the Quarter ended 31st March, 1885, *arranged alphabetically under the following heads:*—(a) *Foreign Countries;* (b) *India, Colonial, and other Possessions;* (c) *United Kingdom and its several Divisions;* (d) *Authors, &c.;* (e) *Societies, &c.;* (f) *Periodicals, &c.*

Donations.	By whom Presented.
(a) Foreign Countries.	
Argentine Republic—	
Annuaire Statistique de la Province de Buénos-Ayres ... I^e Année, 1881. La. 8vo.	Dr. E. R. Coni, La Plata
Informe sobre una comision cientifica en Europa presentado al Ministerio de Gobierno de la Provincia de Buenos Aires ... 8vo. 1884	
Buenos Aires. Bulletin mensuel de Démographie de la ville de—. III^e Année. Nos. 10—12, 1884.	The Statistical Bureau
Austria and Hungary—	
Nachrichten über Industrie, Handel, und Verkehr ... La. 8vo.—	Dr. H. F. Brachelli, Vienna
XXVII Band. Jahresberichte des k. k. österreichisch-ungarischen Consulats-Behörden. XII Jahrgang (Bogen 1—57). 15 parts	
XXIX Band. 4 Heft. Hauptergebnisse der österreichischen Eisenbahn-Statistik im Jahre 1883. 5 Heft. Werthe für die Mengeneinheiten der im Jahre 1883 im österreichisch-ungarischen zollgebiete ein- und ausgeführten Waaren	
Oesterreichische Statistik. 4to.—	The Central Statistical Commission, Vienna
VII Band. Statistik des auswartigen Handels der österreichisch-ungarischen Monarchie im Jahre 1883. 1 heft. Bericht über die Erhebung der Handels-Werthe und Haupt-Ergebnisse des auswärtigen Handels im Jahre 1883	
VIII Band. 1 heft. Statistik der Sparcassen in den im Reichsrathe vertretenen Konigreichen und Ländern für das Jahr 1882. 2 heft. Bewegung der Bevölkerung im Jahre 1883	
Prague. Bulletin hebdomadaire de la ville de Prague et des communes-faubourgs. (Current numbers)	The Statistical Bureau, Prague
Belgium—	
Agriculture. Recensement général. (31 Décembre, 1866.) 4to.	The Administration of Statistics, Ministry of the Interior
Bulletin de la Commission centrale de statistique. 4to. 1860-78—	
Vol. VIII. De la Situation et de l'avenir des Caisses des veuves et orphelins instituées par la loi du 21 Juillet, 1844, *A. Visschers.* De la statistique considerée sous le rapport du physique, du moral, et de l'intelligence de l'homme, *A. Quetelet.* Table de mortalité d'après le recensement de 1856, *A. Quetelet.* Complement du mémoire sur la situation et l'avenir des Caisses des veuves et orphelins, *A. Visschers.* Les sociétés d'assurances sur la vie en Allemagne, Notice par *G. Hopf.* Vérification des Registres de population	

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Exposé de la Situation du Royaume de 1861 à 1875. Vol. ii. Fasc. 8—13. La. 8vo.	
Documents Statistiques sur le Royaume de Belgique recueillis et publiés par le Ministre de l'Interieur. 6e publication officielle. 4to. 1841	
Statistique des Hospices et des Bureaux de Bienfaisance d'après les Budgets de l'Exercice 1853. La. fol.	
Académie royale des Sciences, des lettres, et des beaux Arts de Belgique—	The Academy
Bulletins de l'—. Tome iv, Nos. 5—9, 1837; v, Nos. 6, 7, 1838; ix, 2e partie, 1842; x, Nos. 2, 3, 6—12, 1843; xii, 1ere et 2e parties, 1845; xiii, Nos. 3—5, 9—12, 1846; xiv, Nos. 7—12, 1847. Plates, 8vo.	
Mémoires couronnés et autres mémoires publiés par l'—. Tomes i—xi, xvii—xxxvi. Plates, 8vo. 1840-84	
Union Syndicale de Bruxelles. 8vo.—	G. P. Bevan, Esq.
Bulletin de l'—. IIe Année, No. 5, et Ve Année, No. 1	
Rapport Général sur la situation du Commerce et de l'Industrie pendant les Années 1877 et 1878	
Ville de Bruxelles. Bulletin Hebdomadaire de Statistique, Démographique, et Médicale. (Current numbers)	Dr. E. Janssens, Brussels
China—	
Imperial Maritime Customs. 4to.—	Sir Robert Hart, K.C.M.G.
I. Statistical Series. No. 2. Customs Gazette. No. 63. July—September, 1884	
II. Special Series. No. 6. Chinese Music, J. A. Van Aalst. Plates. 1884	
Denmark—	
Danmarks Statistik. Sammendrag af Statistiske Oplysninger angaaende Kongeriget Danmark. No. 9. (In Danish and French.) 8vo. 1885.....	The Statistical Bureau of Denmark
Nationalökonomisk Tidsskrift. 6 Hefte, 1884; 1 Hefte, 1885	The Danish Political Economy Society
Egypt. Recensement général de l'Égypte, 1882. Tome i, Sections 1—6 (in 2 vols.) (Population.) 4to. Le Caire, 1884	M. A. Boinet, Cairo

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Ministère des Finances. Bulletin de Statistique et de Législation Comparée. Décembre, 1884; Janvier, Février, 1885	M. A. De Foville
Ministère de l'Instruction Publique— Résumé des États de Situation de l'Enseignement Primaire pour l'Année Scolaire 1882-83. La. 8vo. Statistique de l'Enseignement primaire. Tome second. Statistique Comparée de l'Enseignement primaire (1829-77). Diagrams. 4to.....	The Ministry of Public Instruction
Ministère des Travaux Publics. Bulletin du—. Novembre, 1884	The Ministry of Public Works
Rapport presenté au nom de la Commission d'Enquête, sur les souffrances du Commerce, et de l'Industrie, et sur les moyens d'y porter remède. (Doc. du senat.) 4to. 1878	G. P. Bevan, Esq.
Statistiques Coloniales pour l'Année 1882. Population, Culture, Commerce et Navigation. 8vo. 1884.	M. Eugène Minot, Paris
Ville de Lyon. Compte-Rendu des Travaux de la Chambre de Commerce. Années 1874-77. 4 vols. La. 8vo.....	G. P. Bevan, Esq.
Ville de Reims. Bulletin Mensuel du Bureau Municipal d'Hygiène. Décembre, 1884; Janvier, Février, 1885	The Bureau of Hygiène
L'Economiste Français. (Current weekly numbers.) Paris...	The Editor
Révue Bibliographique Universelle, Paris :— Partie Littéraire. Janvier—Mars, 1885 ..... „ Téchnique. Décembre, 1884; Janvier—Mars, 1885	„
La Révue Contemporaine. Tome i, No. 3. (Containing "La Crise Economique," by Joseph Chailley.) 8vo. 1885	Joseph Chailley, Esq.
Révue Géographique Internationale. IX^e^ année, 1884, Nos. 110; X^e^ année 1885, Nos. 111 and 112	The Editor
Rapports de la Délégation Ouvrière Libre à L'Exposition Universelle de Philadelphie, 1876. 12 parts, 8vo.	G. P. Bevan, Esq.
Société de Statistique de Paris. Journal de la—. 1884, 1885— Décembre. Les mouvements de la Navigation intérieure en France pendant l'année 1882. Du mouvement de l'alienation mentale en France 1835 à 1882. Varietés. La Criminalité en Italie pendant l'année 1880. La production et la consommation de la Bière en Autriche-Hongrie (1860-82). La densité de la population dans quelques grandes villes de l'Europe.... Janvier. Vues générales sur la Statistique. Le mouvement de la population de la France pendant l'année 1883. Les Percées des Alpes. Le Commerce Exterieur de la France en 1883. La Crise agricole en Europe. Bibligraphie. L'Annuaire Statistique de la France, 1884	The Society

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Société de Statistique de Paris. Journal de la.—Contd. Février. Rapport de M. Cheysson sur le concours de 1884. Ministère de l'Instruction Publique. Sujets d'étude recommandés par la section des Sciences Economiques et Sociales. Les Colonies françaises. Les Italiens à l'Etranger. Variétés. Le Commerce Général des principaux Pays du Monde. Bibliographie. Turgot et ses doctrines	The Society
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Monatshefte zur Statistik des Deutschen Reichs. November, December, 1884; January, 1885. La. 4to.	The Imperial Statistical Bureau, Berlin
Prussia. Preussische Statistik, fol.— LXXVI (Dritter Theil). Die Ergebnisse der Berufszählung vom 5 Juni, 1882, im preussischen Staate. Landwirthschaftsbetriebe sowie Hauptberuf und Religionsbekenntniss der Bevölkerung. LXXIX. Die Bewegung der Bevölkerung, mit Einschluss der Wanderungen im preussischen Staate wahrend des Jahres 1883	The Royal Statistical Bureau of Prussia
Saxony— Das Statistische Bureau für das Königreich Sachsen in den Ersten Fünfzig Jahren seines Bestehens. Festschrift zum Fünfzigjährigen Jubiläum am 11th April, 1881. 8vo. ..... Die Statistik der Arbeiterverhältnisse und Wohlfahrtseinrichtungen von Dr. V. Böhmert, 4to. 1879	Dr. V. Böhmert.
Berlin. Veröffentlichungen des Statistischen Amts der Stadt- Eheschliessungen, Geburten, Sterbefälle, und Witterung. (Current weekly numbers)	The Statistical Bureau of Berlin
Italy—	
Annali del credito e della Previdenza. Anno 1885 8vo.— Atti della Commissione consultiva sulle Istituzioni di Previdenza e sul Lavoro ..... Cassa Nazionale d'Assicurazione per gl' Infortuni degli operai sul Lavoro ..... Relazione dell' Ispettorato generale degli Istituti di Emissione intorno al Movimento delle Partite più importanti dei medesimi istituti dal 1850 al 1883 ..... Le Società per Azioni in Italia durante il biennio 1882 e 1883 ..... La Statistica del movimento dei metalli preziosi fra l'Italia e l'Estero ..... Annali di Statistica. Serie 3ª. Vol. xii. (Contents.) Ordinamento del Servizio Statistico. Lasciti e donazioni fatti a favore di Opere Pie. Statistica della stampa periodica. Dei provvedimenti a favore dell' infancia abbandonata in Italia ed in alcuni stati d'Europa. 1884..... Atti della Giunta per la Inchiesta Agraria e sulle condizioni della classe Agricola. Vol. xi, tomo 3; vol. xii, fasc. 1; vol. xiii, tomo 1; vol. xiv, fasc. 1. Bilanci Provinciali di Previsione. Anno 1882	The Director-General of Statistics, Rome

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Bollettino Mensile delle Situazioni dei Conti degli Istituti d'Emissione. Anno XV; Nos. 10—12	
Bollettino di Notizie sul Credito e la Previdenza. Anno II, Nos. 17—20; Anno III, Nos. 1—4	
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Report of the Director of the Central Sanitary Bureau upon Cholera in Japan in ... 1879. Map and diagrams, 8vo.	Nagayo Sensai, Esq., Director of the Bureau
Tokio. Journal of the Statistical Society of—. Nos. 1—32. (In Japanese)	K. Nagai, Esq.
Netherlands—	
Staatkundig en Staathuishoudkundig Jaarboekje voor 1884. (6e Serie, Elfde Jaargang) Tweede Aflevering (Mengelwerk). 12mo. 1884	The Statistical Society of the Netherlands
Statistiek der Geboorten en der Sterfte naar den Leeftijd en de oorzaken van den dood in Nederland. October—December, 1884	
Bijdragen van het Statistisch Instituut. No. 1, 1885. La. 8vo. (Contents.) Verslag van den toestand en de werkzaamheden van het Statistisch Instituut. Eenige opmerkingen over de inrichting onzer handelsstatistiek. De statistiek in onze koloniën in Azië, eene historische proeve. Register op de "Consulaire en andere Berichten en verslagen"	The Statistical Institute, Amsterdam

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Miscarea populatiuni din Romania in Anul 1882. (Movement of Population.) 4to.	
Statistica Judiciara din Romania pe Anul 1879. (Judicial Statistics.) 4to.	
Tablou General indicând Comerciul Romaniei cu Terile Straine in Anul 1883. Diagrams. La. 8vo.	
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Data for the Valuation of Landed Dependencies, collected by the Tchernigov Statistical Department of the Government Provincial Board. Vols. xi—xiii. (In Russian.) Maps, la. 8vo. 1884	The Statistical Department
Journal of the Ministry of Finance. (Current weekly numbers.) Fol. (In Russian.) 1884-85	M. A. Vessélovsky, St. Petersburg
Règlement définitif du Budget de l'Empire pour l'Exercice, 1883. Rapport présenté au Conseil de l'Empire par S. Exc. M. Le Controleur de l'Empire. 8vo.	
Spain—	
Boletin Mensual de Estadistica Demográfico-Sanitaria de la Peninsula é islas adyacentes. Nos. 70—75. Maps. 1884-85	Exmo Señor D. José, Magáz y Jayme
Memorias Comerciales y Suplemento. (Current bi-weekly numbers)	The Board of Customs
Madrid. Boletin de la Sociedad Géográfica de—. October—December, 1884	The Society
Sweden and Norway—	
Norway—	
Norges Officielle Statistik. Ny Række. 8vo.—	
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U. Kommunernas Fattigvård och Finanser. Statistiska Centralbyrans underdåniga berättelse för år 1882. (Poor Assistance)	The Central Statistical Bureau, Stockholm
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Statistisk Tidskrift utgifven af Kungl. Statistiska Centralbyrån, 1884. Nos. 2, 3. Map, 8vo.	
Switzerland—	
VILLE DE GENÈVE. Octroi et Ohmgeld. Mémoire présenté au Conseil Municipal, par le Conseil Administratif de la—. La. 8vo. 1885	The Administrative Council of Geneva
United States—	
Tenth Census of the United States, 1880. 4to., cloth—	
Vol. VII. Report on Valuation, Taxation, and Public Indebtedness in the United States as returned at the Tenth Census (1st June, 1880). Diagrams	
Vol. VIII. The Newspaper and Periodical Press, Alaska, its Population, Industries, and Resources. The Seal Islands of Alaska, Ship Building Industries in the United States. Maps, plates, and illustrations	The Hon. George F. Hoar, Washington
Approximate arrears of the United States, the several States, and the Territories. 4to.	G. P. Bevan, Esq.
Department of Agriculture. Special Monthly Reports on the Condition of Crops. New series, Nos. 14, 15	The Department of Agriculture
Bureau of Education—Circulars of Information of the—. 1884—	
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REGISTRATION OF THE UNITED KINGDOM.

No. I.—ENGLAND AND WALES.

MARRIAGES—To 30th September, **1884.**

BIRTHS and DEATHS—To 31st December, **1884.**

A.—*Serial Table of* Marriages, Births, *and* Deaths, *returned in the Years* **1884-78,** *and in the* Quarters *of those Years.*

Calendar Years, **1884-78**:—*Numbers.*

Years.....	'84.	'83.	'82.	'81.	'80.	'79.	'78.
Marriages No.	—	205,814	204,405	197,290	191,965	182,082	190,054
Births..... ,,	908,574	889,815	889,014	883,642	881,643	880,389	891,906
Deaths .... ,,	531,951	522,662	516,654	491,935	528,624	526,255	539,872

Quarters *of each Calendar Year,* **1884-78.**

(I.) Marriages:—*Numbers.*

Qrs. ended last day of	'84.	'83.	'82.	'81.	'80.	'79.	'78.
March..... No.	41,538	43,915	39,820	38,043	41,238	35,956	39,137
June ..... ,,	53,639	47,883	52,905	50,370	45,844	46,623	48,584
September ,,	50,275	52,192	51,207	48,607	47,703	45,121	46,628
December ,,	—	61,824	60,473	60,270	57,180	54,382	55,705

(II.) Births:—*Numbers.*

Qrs. ended last day of	'84.	'83.	'82.	'81.	'80.	'79.	'78.
March..... No.	224,694	232,086	223,616	225,451	221,699	226,056	220,792
June ..... ,,	231,149	228,703	227,425	225,303	232,920	220,966	228,620
September ,,	225,454	214,144	220,382	215,966	219,023	218,668	222,604
December ,,	227,277	214,882	217,591	216,922	208,001	214,699	219,890

(III.) Deaths:—*Numbers.*

Qrs. ended last day of	'84.	'83.	'82.	'81.	'80.	'79.	'78.
March..... No.	132,097	146,856	140,121	138,312	145,787	155,916	139,373
June ..... ,,	127,946	133,783	125,107	120,811	125,366	132,003	129,096
September ,,	134,678	113,118	118,235	110,204	131,241	103,919	129,664
December ,,	137,230*	128,905	133,191	122,608	126,230	134,417	141,739

* The 137,230 deaths in England and Wales include fourteen weeks' deaths in London; the death-rate corrected for this inequality would be reduced to 19·9.

Annual Rates of MARRIAGES, BIRTHS, *and* DEATHS, *per* 1,000 PERSONS LIVING *in the Years* 1884-78, *and in the* QUARTERS *of those Years.*

Calendar YEARS, 1884-78:—*General Ratios.*

YEARS.....	'84.	Mean '74-83.	'83.	'82.	'81.	'80.	'79.	'78.
Estmtd. Popln. of England *in thousands* in middle of each Year....	27,132,	—	26,771,	26,414,	26,062,	25,714,	25,371,	25,033,
Persons Married	—	15·6	15·4	15·5	15·1	14·9	14·4	15·2
Births	33·5	34·9	33·2	33·7	33·9	34·3	34·7	35·6
Deaths.....	19·6	20·7	19·5	19·6	18·9	20·6	20·7	21·6

QUARTERS *of each Calendar Year,* 1884-78.

(I.) PERSONS MARRIED:—*Ratio per* 1,000.

Qrs. ended last day of	'84.	Mean '74-83.	'83.	'82.	'81.	'80.	'79.	'78.
March	12·3	13·0	13·3	12·2	11·8	12·9	11·5	12·7
June.....	15·8	15·8	14·4	16·1	15·5	14·3	14·7	15·6
September	14·7	15·3	15·5	15·4	14·8	14·7	14·1	14·8
December	—	18·5	18·3	18·2	18·4	17·6	17·0	17·7

(II.) BIRTHS:—*Ratio per* 1,000.

Qrs. ended last day of	'84.	Mean '74-83.	'83.	'82.	'81.	'80.	'79.	'78.
March	33·2	36·0	35·2	34·3	35·1	34·6	36·1	35·8
June...	34·2	35·8	34·3	34·5	34·7	36·3	34·9	36·6
September	33·0	34·0	31·7	33·1	32·9	33·8	34·2	35·3
December	33·2	33·9	31·8	32·7	33·0	32·1	33·6	34·9

(III.) DEATHS:—*Ratio per* 1,000.

Qrs. ended last day of	'84.	Mean '74-83.	'83.	'82.	'81.	'80.	'79.	'78.
March	19·5	23·2	22·3	21·5	21·5	22·7	24·9	22·6
June.....	18·9	20·4	20·1	19·0	18·6	19·6	20·9	20·7
September	19·7	18·7	16·8	17·8	16·8	20·3	16·3	20·6
December	20·1*	20·6	19·1	20·0	18·7	19·5	21·0	22·5

* The 137,230 deaths in England and Wales include fourteen weeks' deaths in London; the death-rate corrected for this inequality would be reduced to 19·9.

B.—*Comparative Table of* CONSOLS, PROVISIONS, COAL, *and* PAUPERISM *in each* QUARTER *of* **1882-83-84.**

Quarters ending	Average Prices of: Consols (for Money) per 100*l.* Stock.	Discount charged by the Bank of England.	Wheat per Quarter in England and Wales.	Meat per Pound at the Metropolitan Meat Market (by the Carcase), with the *Mean* Prices. Beef.	Meat per Pound at the Metropolitan Meat Market (by the Carcase), with the *Mean* Prices. Mutton.	Coal (Seaborne) in the London Market per Ton.	Pauperism. Quarterly Average of the Number of Paupers Relieved on the *Last Day* of each Week. In-door.	Pauperism. Quarterly Average of the Number of Paupers Relieved on the *Last Day* of each Week. Out-door.
882	£	£	*s.* *d.*	*d.* *d.* *d.*	*d.* *d.* *d.*	*s.* *d.*		
Mar. 31	100⅜	4·93	45 5	4½—7½ 6	5½—9¼ 7½	15 –	187,202	560,513
June 30	101⅛	3·00	46 9	5—8 6½	5½—9½ 7½	14 9	170,546	542,134
Sept. 30	99⅞	3·67	47 3	5—8¼ 6⅝	5⅜—9⅝ 7½	16 5	165,280	529,921
Dec. 31	101⅛	5·00	40 8	4⅝—8⅛ 6⅜	5⅜—9¾ 7⅝	17 2	180,228	534,387
1883								
Mar. 31	102	3·84	41 3	5⅛—8⅛ 6⅝	5⅞—10⅛ 8	16 6	189,391	558,064
June 30	102⅛	3·57	42 8	5—8 6½	5¾—9½ 7⅝	16 9	172,858	537,495
Sept. 30	100⅛	3·88	42 5	5—8⅜ 6¾	5¾—10 7⅞	17 –	165,263	519,260
Dec. 31	101½	3·00	40 –	4¾—8 6⅜	5⅜—9½ 7½	17 9	178,715	518,070
1884								
Mar. 31	101¾	3·19	37 9	4½—7¾ 6⅛	5—8¾ 6⅞	15 3	186,636	536,767
June 30	101⅞	2·42	37 6	4½—7⅝ 6⅛	5⅛—9 7	14 11	173,749	523,182
Sept. 30	100¾	2·00	35 11	4⅜—7½ 6⅛	4⅞—8⅞ 6⅞	15 11	168,076	513,981
Dec. 31	100¾	4·17	31 7	4⅛—7½ 5⅞	4⅝—8 6⅜	15 11	181,776	518,811

C.—*Special Average Death-Rate Table:*—ANNUAL RATE *of* MORTALITY *per* 1,000 *in* TOWN *and* COUNTRY DISTRICTS *of* ENGLAND *in each Quarter of the Years* **1884-82.**

	Area in Statute Acres.	Population Enumerated. 1881.	Quarters ending	Annual Rate of Mortality per 1,000 in each Quarter of the Years. 1884.	Mean '74-83.	1883.	1882.
In 134 Districts, and 57 Sub-districts, comprising the *Chief Towns*	3,184,419	15,444,808	March ..	20·5	24·6	23·2	23·1
			June	20·0	21·3	20·8	20·2
			Sept.	21·8	20·5	18·3	19·5
			Dec.	21·7*	22·6	20·7	21·7
			Year	21·0	22·3	20·8	21·1
			Year	17·4	18·5	17·7	17·2
In the remaining Districts and Sub-districts of England and Wales, comprising chiefly *Small Towns* and *Country Parishes*	34,134,802	10,523,478	March ..	18·0	21·2	20·8	19·1
			June	17·3	19·0	19·0	17·2
			Sept.	16·5	16·0	14·5	15·2
			Dec.	17·6	17·8	16·6	17·2

Note.—In calculating these rates of mortality corrections are made for inequalities in the numbers of days in the different quarters of the year. The annual rates are the means of the four quarterly rates.

* The deaths in the town districts include fourteen weeks' deaths in London, the death-rate corrected for this inequality would be reduced to 21·3.

D.—*Special Town Table:*—POPULATION; BIRTH-RATE *and* DEATH-RATE *in each Quarter of* **1884**, *in* TWENTY-EIGHT *Large Towns.*

Cities and Boroughs.	Estimated Population in the Middle of the Year 1884.	Annual Rate to 1,000 Living during the Thirteen Weeks ending							
		29th March. (1st Quarter.)		28th June. (2nd Quarter.)		27th September. (3rd Quarter.)		3rd Jan., 1885. (4th Quarter.)	
		Births.	Deaths.	Births.	Deaths.	Births.	Deaths.	Births.	Deaths.
Twenty-eight towns	8,762,354	35·4	21·1	35·0	20·8	33·9	22·8	34·2	21·7
London	4,019,361	34·8	20·4	33·8	19·9	32·8	20·9	33·3	20·2
Brighton	112,954	29·4	19·4	28·0	16·1	27·4	17·1	28·6	19·1
Portsmouth	133,059	35·4	18·5	34·8	21·5	34·3	19·7	35·0	17·8
Norwich	90,410	37·5	19·6	33·9	18·4	32·4	24·0	33·0	22·7
Plymouth	75,509	34·0	20·0	31·6	23·5	32·4	20·3	30·2	20·3
Bristol	215,457	31·0	18·7	32·4	17·2	32·0	17·0	30·6	20·6
Wolverhampton	78,367	36·0	19·3	36·2	24·9	33·4	26·4	32·9	23·1
Birmingham	421,258	36·2	20·3	36·4	20·8	33·9	23·4	34·2	21·1
Leicester	132,773	37·2	18·9	36·9	17·7	36·0	28·6	35·9	23·0
Nottingham	205,298	41·6	21·6	41·0	21·5	38·8	25·8	38·4	22·8
Derby	87,608	32·8	17·5	36·0	16·8	34·2	18·0	35·2	21·1
Birkenhead	90,870	37·3	20·5	39·1	18·7	37·9	19·7	37·8	19·5
Liverpool	573,202	35·9	23·3	35·7	24·8	34·4	27·5	34·9	25·3
Bolton	108,968	35·3	21·7	32·8	22·1	33·5	27·2	31·6	25·2
Manchester	338,296	36·4	27·8	36·7	25·5	36·0	26·5	35·6	25·8
Salford	197,153	36·6	22·6	36·1	19·7	33·9	24·6	35·8	22·3
Oldham	122,676	37·6	25·1	36·0	25·6	36·2	23·6	32·1	23·7
Blackburn	110,498	36·3	21·8	37·8	23·1	38·5	26·8	36·5	24·5
Preston	99,481	38·4	24·7	39·2	24·0	38·5	30·3	39·0	29·9
Huddersfield	86,004	29·5	20·3	29·0	19·0	29·2	18·5	30·2	20·3
Halifax	76,479	27·8	22·3	29·2	23·1	29·9	25·1	30·9	22·9
Bradford	209,564	28·5	18·4	30·5	19·5	28·3	21·3	29·5	21·3
Leeds	327,324	35·4	24·0	35·6	24·2	33·4	26·0	34·7	22·5
Sheffield	300,563	36·5	22·2	36·7	20·5	36·5	25·7	38·0	21·2
Hull	181,225	37·5	19·1	39·1	17·8	38·1	24·2	36·6	23·3
Sunderland	123,204	44·9	22·4	45·3	21·5	40·7	23·7	39·7	24·5
Newcastle	151,325	39·0	22·9	39·3	20·3	41·6	24·6	38·3	24·5
Cardiff	93,468	43·8	21·1	40·6	22·5	42·2	27·1	42·9	26·5
Edinburgh	246,703	30·5	20·5	32·1	21·6	28·7	17·0	29·1	19·6
Glasgow	517,941	38·8	25·8	43·0	26·3	39·7	25·2	36·6	30·0
Dublin	351,014	29·7	27·8	30·3	26·5	28·4	25·4	27·0	30·1

E.—*Divisional Table:*—MARRIAGES *in the Year ending* 30*th September; and* BIRTHS *and* DEATHS *in the Year ending* 31*st December,* **1884**, *as Registered Quarterly.*

1	2	3	4	5	6	7
DIVISIONS. (England and Wales.)	AREA* in Statute Acres.	Enumerated POPULATION, 1881.	MARRIAGES in Quarters ending 31st December, 1883.	31st March, 1884.	30th June, 1884.	30th September, 1884.
ENGLD. & WALES....*Totals*	37,319,221	No. 25,974,439	No. 61,824	No. 41,538	No. 53,639	No. 50,275
I. London	75,362	3,816,483	9,949	6,893	9,209	9,596
II. South-Eastern	3,994,431	2,487,076	5,376	3,473	4,550	4,326
III. South Midland	3,201,325	1,596,259	3,450	1,841	2,715	2,714
IV. Eastern	3,211,441	1,343,524	3,422	1,660	2,203	2,096
V. South-Western	4,981,170	1,859,198	3,805	2,841	3,432	3,102
VI. West Midland	3,945,460	3,029,319	7,296	4,569	6,023	5,451
VII. North Midland	3,535,445	1,637,865	3,968	2,429	3,783	2,797
VIII. North-Western	1,998,914	4,108,184	9,482	7,311	9,230	8,777
IX. Yorkshire	3,702,384	2,894,759	7,266	5,016	5,897	5,612
X. Northern	3,547,947	1,624,213	4,022	2,975	3,425	2,974
XI. Monmthsh. & Wales	5,125,342	1,577,559	3,788	2,530	3,172	2,830

8	9	10	11	12	13	14	15	16
DIVISIONS. (England and Wales.)	BIRTHS in each Quarter of **1884** ending 31st March.	30th June.	30th September.	31st December.	DEATHS in each Quarter of **1884** ending 31st March.	30th June.	30th September.	31st December.
ENGLD. & WALES....*Totals*	No. 224,694	No. 231,149	No. 225,454	No. 227,277	No. 132,097	No. 127,946	No. 134,678	No. 137,230
I. London	34,894	33,814	32,833	35,944	20,382	19,944	20,965	21,759
II. South-Eastern	20,068	19,827	19,709	20,026	11,293	10,445	11,206	11,172
III. South Midland	13,214	13,693	13,295	13,199	7,409	6,786	7,316	7,306
IV. Eastern	11,691	11,682	11,696	11,878	6,278	5,903	6,870	7,005
V. South-Western	13,502	14,207	13,837	14,000	8,975	8,822	7,410	8,507
VI. West Midland	26,082	27,153	25,947	26,143	15,085	14,390	14,874	15,275
VII. North Midland	14,363	15,166	14,899	14,617	7,922	7,630	8,682	8,478
VIII. North-Western	37,605	38,717	37,614	37,116	23,334	23,284	24,959	25,222
IX. Yorkshire	24,901	25,907	25,294	25,560	14,706	14,556	16,445	15,995
X. Northern	15,606	16,744	16,471	15,736	8,377	8,099	8,877	8,625
XI. Monmthsh. & Wales	12,768	14,239	13,859	13,058	8,336	8,087	7,074	7,886

* These are revised figures, and will be found to differ somewhat from those first published.

F.—*General Meteorological Table,*

[Abstracted from the particulars supplied to the

1884. Months.	Temperature of Air. Mean.	Air. Diff. from Average of 113 Years.	Air. Diff. from Average of 43 Years.	Evaporation. Mean.	Evaporation. Diff. from Average of 43 Years.	Dew Point. Mean.	Dew Point. Diff. from Average of 43 Years.	Air—Daily Range. Mean.	Air—Daily Range. Diff. from Average of 43 Years.	Water of the Thames	Elastic Force of Vapour. Mean.	Elastic Force of Vapour. Diff. from Average of 43 Years.	Weight of Vapour in a Cubic Foot of Air. Mean.	Weight of Vapour in a Cubic Foot of Air. Diff. from Average of 43 Years.
	°	°	°	°	°	°	°	°	°		In.	In.	Grs.	Gr.
Jan.....	43·9	+7·4	+5·3	42·5	+5·6	40·8	+6·0	8·6	−1·2	—	·256	+·061	2·9	+0·6
Feb.....	41·9	+3·2	+2·4	39·9	+2·1	37·5	+2·1	10·9	−0·2	—	·225	+·016	2·6	+0·2
Mar. ...	44·5	+3·4	+2·8	41·6	+2·3	38·2	+2·2	15·3	+0·6	—	·231	+·016	2·7	+0·2
Means...	43·4	+4·7	+3·5	41·3	+3·3	38·8	+3·4	11·6	−0·3	—	·237	+·031	2·7	+0·3
April ...	45·1	−1·0	−2·0	42·4	−1·5	39·3	−1·2	17·2	−1·3	—	·240	−·013	2·8	−0·1
May.....	54·3	+1·8	+1·6	49·6	+0·7	44·9	−0·2	21·9	+1·4	—	·298	−·001	3·4	−0·1
June ...	58·0	−0·2	−0·0	54·4	−0·1	51·0	+0·3	20·2	−0·7	—	·374	+·004	4·2	+0·1
Means...	52·5	+0·2	−0·4	48·8	−0·3	45·1	−0·4	19·8	−0·2	—	·304	−·003	3·5	0·0
July.....	63·4	+1·7	+1·3	58·5	+0·8	54·4	+0·4	21·8	+0·8	—	·424	+·006	4·7	−0·1
Aug. ...	65·3	+4·4	+3·9	59·8	+2·3	54·2	+0·2	25·1	+5·4	—	·421	+·002	4·6	−0·1
Sept. ...	59·3	+2·8	+2·2	56·3	+2·3	53·3	+2·2	17·9	−0·4	—	·407	+·027	4·6	+0·2
Means...	62·7	+3·0	+2·5	58·2	+1·8	54·0	+0·9	21·6	+1·9	—	·417	+·012	4·6	0·0
Oct.....	48·9	−0·6	−1·1	46·4	−1·6	43·7	−2·2	14·9	+0·3	—	·285	−·026	3·2	−0·7
Nov. ...	42·4	+0·1	−1·1	40·5	−0·9	38·3	−1·1	10·8	−0·7	—	·231	−·015	2·7	−0·2
Dec. ...	41·0	+1·9	+1·1	39·3	+0·8	37·2	+0·6	8·6	−0·8	—	·222	+·003	2·6	0·0
Means...	44·1	+0·5	−0·4	42·1	−0·6	39·7	−0·9	11·4	−0·4	—	·246	−·013	2·8	−0·3

Note.—In reading this table it will be borne in mind that the sign (−) minus signifies

The mean temperature of the air for October was 48°·9, being 0°·6 and 1°·1 below the averages of 113 years and 43 years respectively; it was 1°·5 and 1°·9 lower than in 1883, and 1882, and 3°·6 higher than in 1881.

The mean temperature of the air for November was 42°·4, being 0°·1 above the averages of 113 years and 1°·1 below the average of 43 years; it was 1°·4, 1°·1, and 6°·3 lower than in 1883, 1882, and 1881 respectively.

The mean temperature of the air for December was 41°·0, being 1°·9 and 1°·1 above the averages of 113 years and 43 years respectively; it was 0°·5, 0°·9, and 1°·2 higher than in 1883, 1882, and 1881 respectively.

The mean temperature of the quarter was 44°·1, being 0°·5 higher than the average of 113 years and 0°·4 lower than the average of 43 years.

for the Year ended 31st December, **1884.**

Registrar-General by JAMES GLAISHER, Esq., F.R.S., &c.]

Degree of Humidity.		Reading of Barometer.		Weight of a Cubic Foot of Air.		Rain.		Daily Horizontal Movement of the Air.	Reading of Thermometer on Grass.					1884.
									Number of Nights it was			Lowest Reading at Night.	Highest Reading at Night.	
Mean	Diff. from Average of 43 Years	Mean.	Diff. from Average of 43 Years.	Mean.	Diff. from Average of 43 Years.	Amnt.	Diff. from Average of 68 Years.		At or below 30°.	Between 30° and 40°.	Above 40°.			Months.
		In.	In.	Grs.	Grs.	In.	In.	Miles.				°	°	
89	0	29·915	+·163	550	− 4	1·77	−0·11	404	5	21	5	28·9	41·5	January
85	0	29·744	−·048	549	− 4	1·50	−0·09	336	10	15	4	25·0	42·0	Feb.
79	− 2	29·762	+·013	547	− 3	1·37	−0·17	266	7	23	1	24·0	41·8	March
84	− 1	29 807	+·043	549	− 4	Sum 4·64	Sum −0·37	Mean 335	Sum 22	Sum 59	Sum 10	Lowest 24·0	Highst 42·0	Means
80	0	29·645	−·107	544	+ 1	1·11	−0·64	246	11	16	3	17·9	42·8	April
71	− 8	29·824	+·033	537	− 4	0·96	−1·10	323	1	23	7	29·8	50·8	May
78	+ 3	29·857	+·053	533	+ 1	2·24	+0·24	193	0	11	19	32·2	48·4	June
76	− 2	29·775	−·003	538	− 1	Sum 4·31	Sum −1·50	Mean 254	Sum 12	Sum 50	Sum 29	Lowest 17·9	Highst 50·8	Means
74	− 2	29·780	−·014	525	− 3	1·77	−0·78	230	0	4	27	30·7	53·8	July
68	− 9	29·835	+·053	525	− 3	0·67	−1·74	197	0	5	26	37·1	58·4	August
81	0	29·835	+·036	531	− 2	2·09	−0·35	257	0	9	21	32·4	55·5	Sept.
74	− 4	29·817	+·025	527	− 3	Sum 4·53	Sum −2·87	Mean 228	Sum 0	Sum 18	Sum 74	Lowest 30·7	Highst 58·4	Means
83	− 5	29·895	+·185	544	+ 4	1·04	−1·79	294	9	18	4	25·6	46·1	October
85	− 3	29·978	+·237	553	+ 5	0·99	−1·36	260	16	9	5	17·5	44·9	Nov.
87	− 2	29·690	−·102	549	− 3	2·54	+0·56	430	6	23	2	20·9	46·7	Dec.
85	− 3	29·854	+·043	549	+ 2	Sum 4·57	Sum −2·59	Mean 328	Sum 31	Sum 50	Sum 11	Lowest 17·5	Highst 46·7	Means

below the average, and that the sign (+) plus signifies above the average.

The mean high day temperatures of the air in October was 56°·5, being 1°·6 below the average of 43 years; in November it was 47°·6, being 1°·3 below the average, and in December it was 45°·1, being 0°·4 above the average.

The mean low night temperature of the air in October was 41°·6, being 1°·9 below the average of 43 years; in November it was 36°·8, being 0°·5 below the average, and in December it was 36°·5, being 1°·3 above the average.

The mean daily range of temperature in October was 14°·9, being 0°·3 greater than the average; in November it was 10°·8, being 0°·7 smaller than the average, and in December it was 8°·6, being 0°·8 smaller than the average.

The mean temperature of the air for October was 10°·4 lower than in September, in November it was 6°·5 lower than in October, and in December it was 1°·4 lower than in November.

No. II.—SCOTLAND.

BIRTHS, DEATHS, AND MARRIAGES, IN THE YEAR ENDED 31ST DECEMBER, 1884.

I.—*Serial Table:—Number of* BIRTHS, DEATHS, *and* MARRIAGES *in Scotland, and their Proportion to the Population estimated to the Middle of each Year, during each Quarter of the Years* **1884-80** *inclusive.*

	1884.		1883.		1882.		1881.		1880.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
1st Quarter—										
Births	30,889	3·21	31,342	3·32	31,206	3·30	30,860	3·30	31,319	3·38
Deaths	19,115	1·99	22,012	2·33	18,265	1·93	21,284	2·27	20,751	2·24
Marriages	6,679	0·70	6,530	0·69	6,589	0·70	6,483	0·69	6,006	0·65
Mean Temperature	40°·2		38°·2		42°·2		33°·2		39°·9	
2nd Quarter—										
Births	33,897	3·52	32,420	3·40	33,346	3·52	33,351	3·56	33,827	3·65
Deaths	18,751	1·95	20,386	2·14	18,293	1·93	17,889	1·91	19,711	2·13
Marriages	6,673	0·69	6,814	0·71	6,609	0·69	6,208	0·66	6,224	0·67
Mean Temperature	48°·7		48°·6		48°·8		48°·5		49°·5	
3rd Quarter—										
Births	32,294	3·32	30,087	3·12	30,718	3·25	31,158	3·33	30,179	3·26
Deaths	17,555	1·81	16,537	1·72	16,886	1·78	15,602	1·67	17,047	1·84
Marriages	5,729	0·59	5,890	0·62	5,957	0·63	5,787	0·62	5,500	0·59
Mean Temperature	56°·6		55°·0		55°·5		54°·2		57°·1	
4th Quarter—										
Births	31,961	3·29	30,163	3·17	30,912	3·27	30,845	3·29	29,327	3·17
Deaths	19,707	2·03	17,932	1·86	19,522	2·06	17,526	1·87	18,286	1·97
Marriages	6,980	0·72	7,621	0·79	7,419	0·78	7,470	0·80	6,759	0·73
Mean Temperature	41°·3		42°·1		40°·2		42°·7		39°·2	
Year—										
Population	3,866,521		3,825,744		3,785,400		3,744,685		3,705,995	
Births	129,041	3·34	124,462	3·25	126,182	3·33	126,214	3·37	124,652	3·36
Deaths	75,128	1·94	76,867	2·01	72,966	1·93	72,301	1·93	75,795	2·05
Marriages	26,061	0·67	26,855	0·80	26,574	0·70	25,948	0·69	24,489	0·66

II.—*Special Average Table:—Number of Births, Deaths, and Marriages in Scotland and in the Town and Country Districts for each Quarter of the Year ending 31st December,* **1884**, *and their Proportion to the Population; also the Number of Illegitimate Births, and their Proportion to the Total Births.*

Registration Groups of Districts.	Total Births.			Illegitimate Births.			Deaths.			Marriages.		
	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every	Number.	Per Cent.	Ratio. One in every
1st Quarter—												
SCOTLAND	30,889	3·21	31	2,639	8·5	11·7	19,115	1·99	50	6,679	0·70	143
Principal towns	13,101	3·54	28	959	7·3	13·7	8,313	2·24	45	3,191	0·86	116
Large ,,	3,446	3·38	30	236	6·9	14·6	2,133	2·09	48	775	0·76	131
Small ,,	6,436	3·14	32	550	8·5	11·7	3,901	1·91	52	1,321	0·64	155
Mainland rural	7,141	3·84	35	843	11·8	8·5	4,278	1·69	59	1,169	0·46	216
Insular ,,	765	2·37	42	51	6·7	15·0	490	1·51	66	223	0·69	145
2nd Quarter—												
SCOTLAND	33,897	3·52	28	2,607	7·7	13·0	18,751	1·95	51	6,673	0·69	144
Principal towns	14,536	3·92	25	1,031	7·1	14·1	8,537	2·30	43	3,153	0·85	118
Large ,,	3,775	3·71	27	245	6·5	15·4	2,125	2·09	48	736	0·72	138
Small ,,	7,208	3·53	28	560	7·8	12·9	3,618	1·77	56	1,284	0·63	159
Mainland rural	7,703	3·05	33	733	9·5	10·5	4,012	1·59	63	1,402	0·56	179
Insular ,,	675	2·09	48	38	5·6	10·4	459	1·42	70	98	0·30	328
3rd Quarter—												
SCOTLAND	32,294	3·32	30	2,629	8·1	12·3	17,555	1·81	55	5,729	0·59	169
Principal towns	13,343	3·56	28	1,102	8·3	12·1	8,010	2·13	47	2,990	0·80	125
Large ,,	3,743	3·63	27	242	6·5	15·4	1,903	1·84	54	645	0·62	160
Small ,,	6,868	3·32	30	505	7·3	13·6	3,579	1·73	58	1,101	0·53	187
Mainland rural	7,451	2·93	34	730	9·8	10·2	3,575	1·40	71	929	0·36	275
Insular ,,	889	2·72	37	50	5·6	17·8	488	1·49	67	64	0·20	510
4th Quarter—												
SCOTLAND	31,961	3·29	30	2,591	8·1	12·3	19,707	2·03	49	6,980	0·72	140
Principal towns	13,262	3·54	28	974	7·3	13·6	9,371	2·50	40	2,922	0·78	128
Large ,,	3,588	3·48	29	255	7·1	14·0	2,088	2·03	49	719	0·70	143
Small ,,	6,868	3·32	30	567	8·3	12·1	3,810	1·84	54	1,450	0·70	143
Mainland rural	7,347	2·88	35	748	10·2	9·8	3,925	1·54	65	1,686	0·66	151
Insular ,,	896	2·75	36	47	5·3	19·0	513	1·57	64	203	0·62	161

Population of Scotland.

Population.	Scotland.	Principal Towns.	Large Towns.	Small Towns.	Mainland Rural.	Insular Rural.
By Census of 1881	3,735,573	1,412,350	388,797	791,250	1,012,788	130,388
Estimated to the middle of 1884	3,866,521	1,490,648	409,796	821,933	1,014,272	129,872

III.—*Bastardy Table:—Proportion of* ILLEGITIMATE *in every Hundred* BIRTHS *in the Divisions and Counties of* SCOTLAND, *during each quarter of the Year ending* 31*st December*, **1884**; *with the Corresponding Figures for* **1883** *added for Comparison.*

Divisions and Counties.	Per Cent. for the Quarters ending 1884.				Per Cent. for the Quarters ending 1883.			
	31st March.	30th June.	30th Sept.	31st Dec.	31st March.	30th June.	30th Sept.	31st Dec.
SCOTLAND	8·5	7·7	8·1	8·1	8·4	7·8	8·2	7·8
Divisions—								
Northern	9·2	8·6	7·5	8·1	7·6	8·5	7·8	6·6
North-Western	5·7	6·3	6·8	6·0	4·8	6·9	5·5	5·2
North-Eastern	15·9	12·6	13·9	13·7	14·1	12·2	13·2	13·3
East Midland	8·7	8·1	8·8	7·8	8·2	8·7	9·2	8·7
West Midland	7·6	6·0	6·0	5·7	6·5	5·3	6·7	4·9
South-Western	6·4	6·4	6·7	6·6	7·0	6·5	7·0	6·2
South-Eastern	8·3	7·2	7·4	8·2	8·0	7·5	7·3	7·4
Southern	15·1	12·3	13·2	13·8	15·6	12·2	12·8	15·0
Counties—								
Shetland	7·1	6·2	4·2	2·9	3·1	3·4	7·6	3·3
Orkney	7·7	9·0	3·7	8·6	7·8	6·4	4·5	6·9
Caithness	13·3	10·5	11·5	11·4	10·5	11·2	11·9	8·5
Sutherland	6·6	6·6	8·1	8·4	6·1	13·0	3·5	5·9
Ross and Cromarty	5·2	5·9	5·2	3·9	3·2	5·8	5·4	3·8
Inverness	6·2	6·6	8·3	8·1	6·3	7·7	5·7	6·6
Nairn	17·1	15·0	7·4	13·4	15·4	8·6	10·6	15·5
Elgin	17·9	15·0	14·4	13·3	15·4	13·7	16·5	14·1
Banff	19·7	13·4	15·3	15·4	18·0	11·7	14·2	14·7
Aberdeen	15·0	12·1	13·9	13·8	13·4	12·4	12·9	12·9
Kincardine	14·3	10·7	11·0	10·7	12·8	10·0	10·4	12·7
Forfar	10·3	9·1	10·6	9·4	9·2	8·2	10·3	10·6
Perth	8·8	8·9	8·8	7·7	9·3	9·9	11·5	8·7
Fife	6·3	6·5	5·9	5·9	6·2	5·5	6·6	5·9
Kinross	18·6	10·2	13·9	6·4	6·5	5·4	8·3	16·1
Clackmannan	5·3	5·2	8·2	3·2	6·2	7·9	5·1	5·2
Stirling	8·7	6·6	7·1	5·3	6·1	6·1	6·9	4·3
Dumbarton	5·7	5·0	4·7	4·6	5·2	3·7	4·5	4·5
Argyll	8·9	5·8	5·8	8·0	8·6	6·3	8·3	6·1
Bute	4·8	7·2	6·9	6·6	7·1	5·3	11·2	7·0
Renfrew	5·6	5·6	5·9	5·7	5·8	5·1	6·3	5·3
Ayr	7·6	6·9	6·5	7·2	6·8	6·7	7·6	5·5
Lanark	6·4	6·4	6·9	6·8	7·3	6·8	7·1	6·5
Linlithgow	8·4	9·9	4·0	8·4	8·9	6·7	9·2	7·0
Edinburgh	7·7	6·6	7·8	7·6	7·6	7·9	6·7	7·8
Haddington	8·3	10·0	6·8	6·6	7·3	4·4	8·4	6·2
Berwick	15·2	7·3	8·8	13·6	12·2	7·5	11·9	6·7
Peebles	5·5	8·4	6·6	10·4	6·5	10·3	7·0	5·9
Selkirk	9·8	6·1	8·4	12·5	9·5	7·2	6·4	5·5
Roxburgh	8·9	9·8	9·7	12·5	12·1	8·5	7·8	12·8
Dumfries	15·5	13·0	13·2	14·4	13·4	13·5	14·2	15·2
Kirkcudbright	17·3	13·1	15·3	12·5	17·1	13·6	13·6	13·2
Wigtown	19·6	13·7	15·5	15·2	23·2	13·2	15·9	19·7

IV.—*Divisional Table:*—MARRIAGES, BIRTHS, *and* DEATHS *Registered in the Year ended 31st December*, **1884.**

(Compiled from the Registrar-General's Quarterly Returns.)

1 DIVISIONS. (Scotland)	2 AREA in Statute Acres.	3 POPULATION, 1881. (*Persons.*)	4 Marriages.	5 Births.	6 Deaths.
		No.	No.	No.	No.
SCOTLAND ..... *Totals*	19,639,377	3,735,573	26,061	129,041	75,128
I. Northern	2,261,622	123,984	604	3,025	1,820
II. North-Western.....	4,739,876	165,856	832	4,245	2,589
III. North-Eastern	2,429,594	418,250	2,597	13,813	7,126
IV. East Midland	2,790,492	602,421	3,998	19,204	11,304
V. West Midland	2,693,176	283,460	1,633	9,308	5,319
VI. South-Western.....	1,462,397	1,385,447	11,349	55,362	32,378
VII. South-Eastern	1,192,524	546,658	3,935	18,255	10,822
VIII. Southern	2,069,696	209,497	1,113	5,829	3,770

No. III.—GREAT BRITAIN AND IRELAND.

SUMMARY *of* MARRIAGES, *in the Year ended 30th September*, **1884**; *and of* BIRTHS *and* DEATHS, *in the Year ended 31st December* **1884.**

(Compiled from the Quarterly Returns of the respective Registrars- eneral.)

COUNTRIES.	[000's omitted.] Area in Statute Acres.	[000's omitted.] Population, 1881. (*Persons.*)	Marriages.	Per 1,000 of Population.	Births.	Per 1,000 of Population.	Deaths.	Per 1,000 of Population.
		No.	No.	Ratio.	No.	Ratio.	No.	Ratio.
England and Wales	37,319,	25,974,	207,276	7·9	908,574	34·9	531,951	20·4
Scotland	19,639,	3,736,	26,061	6·9	129,041	34·5	75,128	20·1
Ireland	20,323,	5,175,	22,685	4·3	119,195	23·0	87,564	16·9
GREAT BRITAIN AND IRELAND	77,281,	34,885,	256,022	7·3	1,156,810	33·1	694,643	19·9

Note.—The numbers against Ireland represent the marriages, births, and deaths that the local registrars have *succeeded* in recording; but how far the registration approximates to absolute completeness, does not at present appear to be known. It will be seen that the Irish ratios of marriages, births, and deaths are much under those of England and Scotland.—ED. *S. J.*

Trade of United Kingdom, for the Years 1883-79.—*Declared Value of the Total Exports of* **Foreign** *and* **Colonial** *Produce and Manufactures to each Foreign Country and British Possession.*

Merchandise Exported to the following Foreign Countries, &c.	[000's omitted.] 1883.	1882.	1881.	1880.	1879.
I.—Foreign Countries.	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark, & Iceland, & Heligoland	4,473,	4,674,	5,218,	5,416,	4,742,
Central Europe; viz., Germany, Holland and Belgium	25,787,	25,916,	24,702,	25,732,	23,913,
Western Europe; viz., France, Portugal, (with Azores, Madeira, &c.), and Spain, (with Gibraltar and Canaries)	13,480,	14,070,	15,102,	13,895,	13,061,
Southern Europe; viz., Italy, Austrian Empire, Greece, Ionian Islands, and Malta	1,975,	1,738,	1,426,	1,418,	1,616,
Levant; viz., Turkey, Roumania,* Syria and Palestine, and Egypt	914,	773,	786,	675,	662,
Northern Africa; viz., Tripoli, Tunis, Algeria, and Morocco	64,	142,	56,	62,	74,
Western Africa	262,	218,	186,	219,	221,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands	—	—	—	—	—
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	61,	61,	—	851,	29,
South Sea Islands	—	—	—	—	—
China, including **Hong Kong** and Japan	784,	678,	782,	1,163,	1,030,
United States of America	9,360,	7,738,	6,987,	7,098,	5,197,
Mexico and Central America	89,	124,	104,	80,	98,
Foreign West Indies and Hayti	839,	841,	15,	15,	686,
South America (Northern), New Granada, Venezuela and Ecuador	72,	90,	63,	58,	37,
„ **(Pacific)**, Peru, Bolivia, Chili, and Patagonia	282,	336,	302,	313,	260,
„ **(Atlantic)**, Brazil, Uruguay, and Argentine Confed.	555,	578,	355,	358,	420,
Other countries (unenumerated)	121,	104,	121,	159,	108,
Total—Foreign Countries	59,118,	58,081,	56,205,	57,512,	52,172,
II.—British Possessions.					
British India, Ceylon, and Singapore	1,712,	1,722,	2,031,	1,627,	1,540,
Austral. Cols.—New South Wales and Victoria, So. Aus., W. Aus., Tasm., and N. Zealand	2,623,	3,086,	2,604,	1,817,	1,689,
British North America	954,	983,	897,	807,	674,
„ W.Indies with Btsh.Guiana & Honduras	374,	327,	342,	407,	291,
Cape and Natal	443,	582,	619,	576,	517,
Brt. W. Co. of Af., Ascension and St. Helena	71,	83,	69,	101,	102,
Mauritius	74,	54,	43,	28,	25,
Channel Islands	202,	209,	204,	232,	214,
Other possessions	67,	66,	46,	247,	27,
Total—British Possessions	6,520,	7,112,	6,855,	5,842,	5,080,
General Total £	65,638,	65,193,	63,060,	63,354,	57,272,

* Wallachia and Moldavia to 1878, and Roumania in 1879.

Trade of United Kingdom, 1884-83-82.—*Distribution of* **Exports*** *from United Kingdom, according to their Declared Real Value; and the Declared Real Value (Ex-duty) of* **Imports** *at Port of Entry, and therefore including Freight and Importer's Profit.*

[000's omitted.]

Merchandise (*excluding Gold and Silver*) Imported from, and Exported to, the following Foreign Countries, &c.	1884.		1883.		1882.	
	Imports from	*Exports to*	Imports from	*Export to*	Import from	*Exports to*
I.—Foreign Countries:	£	£	£	£	£	£
Northern Europe; viz., Russia, Sweden, Norway, Denmark & Iceland, & Heligoland	32,113,	11,075,	39,058,	11,171,	38,061,	11,585,
Central Europe; viz., Germany, Holland, and Belgium	64,627,	37,409,	69,134,	36,626,	65,474,	36,136,
Western Europe; viz., France, Portugal (with Azores, Madeira, &c.), and Spain (with Gibraltar and Canaries)	50,910,	23,725,	54,039,	24,380,	54,771,	24,030,
Southern Europe; viz., Italy, Austrian Empire, Greece, Roumania, and Malta	10,543,	11,138,	11,798,	11,813,	12,561,	10,226,
Levant; viz., Turkey, Asiatic and European (including Cyprus), and Egypt	15,009,	9,285,	15,352,	10,062	12,504,	8,880,
Northern Africa; viz., Tripoli, Tunis, Algeria and Morocco	1,506,	770,	1,729,	781,	1,406,	714,
Western Africa	1,480,	2,009,	1,739,	1,636,	1,713,	1,227,
Eastern Africa; with African Ports on Red Sea, Aden, Arabia, Persia, Bourbon, and Kooria Mooria Islands	466,	590,	999,	845,	821,	596,
Indian Seas, Siam, Sumatra, Java, Philippines; other Islands	4,758,	3,379,	5,876,	3,599,	6,052,	3,369,
South Sea Islands	130,	91,	121,	141,	114,	101,
China and Japan, including **Hong Kong**	11,882,	9,628,	12,058,	9,395,	12,110,	9,761,
United States of America	86,054,	24,430,	98,521,	27,383,	87,855,	30,999,
Mexico and Central America	2,000,	1,916,	1,869,	2,391,	2,131,	2,600,
Foreign West Indies, Hayti, &c.	1,323,	2,457,	1,509,	3,191,	2,091,	3,070,
South America (Northern), New Granada, Venezuela, and Ecuador	911,	2,141,	1,379,	2,005,	1,607,	1,718,
„ (Pacific), Peru, Bolivia, Chili, and Patagonia	4,917,	3,225,	5,985,	2,881,	6,494,	4,075,
„ (Atlantic) Brazil, Uruguay, and Argentine Republic	6,519,	13,865,	7,741,	12,844,	8,544,	12,484,
Whale Fisheries; Grnlnd., Davis' Straits, Southn. Whale Fishery, Falkland Islands, and French Possessions in North America	228,	27,	192,	34,	214,	85,
Total—Foreign Countries	295,376,	157,160,	329,099,	161,178,	314,523,	161,656,
II.—British Possessions:						
British India, Ceylon, and Singapore	41,566,	33,964,	45,835,	35,218,	46,944,	32,027,
Austral. Cols.—N. So. W., Victoria & Queensld.	18,409,	17,127,	16,925,	16,944,	16,710,	17,309,
„ „ So. Aus., W. Aus., Tasm., N. Zealand, & Fiji Islands	9,970,	6,748,	9,026,	7,267,	8,449,	8,047,
British North America	11,125,	8,648,	12,215,	9,154,	10,307,	9,703,
„ W. Indies with Btsh. Guiana & Honduras	5,213,	3,236,	5,137,	3,568,	6,780,	3,328,
Cape and Natal	5,950,	4,104,	5,868,	4,558,	6,263,	7,525,
Brt. W. Co. of Af., Ascension and St. Helena	1,087,	938,	729,	874,	626,	817,
Mauritius	357,	389,	415,	506,	449,	495,
Channel Islands	851,	613,	796,	563,	847,	570,
Total—British Possessions	94,528,	75,767,	96,946,	78,652,	97,375,	79,812,
General Total £	389,904,	232,927,	426,045,	239,830,	411,898,	241,477,

* *i.e.*, British and Irish produce and manufactures.

IMPORTS.—(United Kingdom.)—**For the Years 1884-83-82-81-80.**—*Declared Real Value (Ex-duty), at Port of Entry (and therefore including Freight and Importer's Profit), of Articles of Foreign and Colonial Merchandise Imported into the United Kingdom.*

[000's omitted.]

Foreign Articles Imported.		1884.	1883.	1882.	1881.	1880.
		£	£	£	£	£
Raw Matls.—*Textile*, &c.	Cotton, Raw ...	44,114,	44,279,	46,193,	43,502,	42,765,
	Wool	28,566,	26,718,	27,207,	27,499,	28,356,
	Silk*	15,561,	14,282,	14,905,	15,066,	17,461,
	Flax	3,028,	2,877,	3,608,	3,398,	4,070,
	Hemp and Jute	5,679,	6,877,	6,501,	6,159,	5,894,
	Indigo	2,484,	2,467,	2,610,	2,346,	1,698,
		99,432,	97,500,	101,024,	97,970,	100,244,
,, ,	*Various.* Hides	3,885,	3,804,	3,741,	6,355,	6,911,
	Oils	3,031,	3,461,	2,900,	3,359,	3,418,
	Metals	16,806,	13,997,	14,392,	12,448,	15,794,
	Tallow	2,097,	2,100,	2,256,	2,102,	2,310,
	Timber	15,027,	17,138,	17,168,	14,957,	16,583,
		40,846,	40,500,	40,457,	39,221,	46,016,
,, ,,	*Agricltl.* Guano	439,	722,	390,	489,	805,
	Seeds	7,574,	9,085,	8,608,	7,563,	7,597,
		8,013,	9,807,	8,998,	8,052,	8,402,
Tropical, &c., Produce.	Tea	10,567,	11,769,	11,363,	11,345,	11,752,
	Coffee and Chich.	3,826,	4,992,	5,288,	5,267,	7,062,
	Sugar & Molasses	19,854,	25,086,	24,976,	24,404,	22,970,
	Tobacco	2,777,	2,900,	2,563,	2,623,	2,901,
	Rice	2,683,	3,181,	3,297,	3,666,	3,750.
	Fruits	5,609,	4,217,	4,055,	4,125,	3,288,
	Wines	5,347,	5,460,	5,463,	5,660,	6,483,
	Spirits	1,890,	1,744,	1,875,	1,676,	1,979,
		52,553,	59,349,	58,880,	58,766,	60,185,
Food	Grain and Meal.	47,563,	67,040,	63,196,	60,557,	62,369,
	Provisions	41,696,	42,518,	36,808,	41,296,	43,438,
		89,259,	109,558,	100,004,	101,853,	105,807,
Remainder of Enumerated Articles		58,247,	61,719,	57,766,	47,694,	48,582,
Total Enumerated Imports		348,350,	378,433,	367,129,	353,556,	368,240,
Add for Unenumerated Imports (say)		41,424,	47,171,	44,872,	42,100,	41,750,
Total Imports		389,774,	425,604,	412,001,	395,656,	409,990,

* "Silk," inclusive of manufactured silk, "not made up."

EXPORTS.—(United Kingdom.)—**For the Years 1884-83-82-81-80.**—*Declared Real Value, at Port of Shipment, of Articles of* British *and* Irish *Produce and Manufactures Exported from the United Kingdom.*

[000's omitted.]

British Produce, &c., Exported.		1884.	1883.	1882.	1881.	1880.
		£	£	£	£	£
Manfrs.—*Textile.*	Cotton Manufactures..	58,925,	62,937,	62,945,	65,923,	63,657,
	,, Yarn	13,812,	13,511,	12,867,	13,167,	11,906,
	Woollen Manufactures	20,131,	18,320,	18,789,	18,122,	17,270,
	,, Yarn	3,892,	3,267,	3,399,	3,224,	3,344,
	Silk Manufactures.....	2,173,	2,426,	2,692,	2,565,	2,029,
	,, Yarn	613,	707,	828,	1,009,	685,
	Linen Manufactures	5,178,	5,439,	5,967,	5,844,	5,826,
	,, Yarn	1,137,	1,059,	1,038,	1,057,	978,
		105,861,	107,666,	108,525,	110,911,	105,695,
,, *Sewed.*	Apparel	3,936,	3,636,	4,170,	3,710,	3,194,
	Haberdy. and Mllnry.	2,853,	3,879,	4,258,	4,190,	3,869,
		6,789,	7,515,	8,428,	7,900,	7,063,
Metals, &c.	Hardware	3,141,	3,756,	4,112,	3,859,	3,512,
	Machinery	13,051,	13,444,	11,963,	9,944,	9,262,
	Iron	24,488,	28,584,	31,579,	27,576,	28,307,
	Copper and Brass.....	4,021,	4,005,	3,782,	3,823,	3,638,
	Lead and Tin	891,	1,077,	1,158,	1,139,	984,
	Coals and Culm	10,852,	10,642,	9,561,	8,794,	8,379,
		56,444,	61,508,	62,155,	55,135,	54,082,
Ceramic Manufcts.	Earthenware and Glass	2,887,	3,280,	3,283,	3,059,	2,896,
Indigenous Mnfrs. and Products.	Beer and Ale.....	1,642,	1,816,	1,872,	1,725,	1,730,
	Butter	205,	212,	220,	205,	201,
	Cheese	61,	59,	65,	51,	51,
	Candles	214,	148,	135,	138,	143,
	Salt.....	613,	645,	570,	587,	604,
	Spirits	794,	789,	756,	769,	532,
	Soda	—	—	—	—	—
		3,529,	3,669,	3,618,	3,475,	3,261,
Various Manufcts.	Books, Printed	1,172,	1,176,	1,173,	1,101,	971,
	Furniture	—	—	—	—	—
	Leather Manufactures	2,299,	2,398,	2,833,	2,461,	2,096,
	Soap	548,	449,	458,	397,	443,
	Plate and Watches	322,	338,	352,	285,	233,
	Stationery	848,	883,	882,	796,	723,
		5,189,	5,244,	5,698,	4,040,	4,466,
Remainder of Enumerated Articles		34,389,	28,146,	25,844,	25,563,	24,843,
Unenumerated Articles.....		17,839,	22,802,	23,926,	22,856,	20,505,
Total Exports.....		232,927,	239,830,	241,477,	233,939,	222,811,

SHIPPING.—(United Kingdom.)—*Account of Tonnage of Vessels Entered and Cleared with Cargoes, from and to Various Countries, during the* **Years** *ended December,* **1884-83-82.**

Countries from whence Entered and to which Cleared.	Total British and Foreign.					
	1884.		1883.		1882.	
	Entered.	Cleared.	Entered.	Cleared.	Entered.	Cleared.
FOREIGN COUNTRIES.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Russia { Northern ports	1,416,088	1,143,731	1,573,043	1,143,214	1,572,277	1,236,101
Russia { Southern „	373,421	279,034	454,222	280,952	443,379	262,090
Sweden	1,259,735	945,511	1,390,679	916,110	1,357,908	896,982
Norway	982,657	575,623	966,000	563,777	930,236	564,359
Denmark	262,250	879,792	299,924	887,885	284,297	790,623
Germany	1,917,595	2,922,140	2,109,202	2,804,169	1,867,051	2,664,678
Holland	1,583,316	1,578,225	1,479,657	1,513,252	1,447,736	1,475,274
Belgium	1,247,679	1,164,870	1,195,207	1,145,969	1,083,521	1,050,429
France	2,026,831	3,912,883	2,075,005	4,044,855	2,005,471	3,818,367
Spain	2,062,413	1,065,782	2,236,854	1,023,441	2,400,816	928,619
Portugal	189,006	424,429	214,350	420,811	235,270	377,292
Italy	205,214	1,602,221	288,891	1,633,426	302,734	1,396,790
Austrian territories	111,051	154,921	64,163	84,289	59,162	71,982
Greece	81,156	134,420	82,271	124,815	95,908	106,646
Roumania	267,366	109,107	272,228	111,739	346,918	86,903
Turkey	297,505	307,571	296,703	313,383	206,155	251,284
Egypt	328,386	769,819	346,073	683,530	248,216	567,086
United States of America	4,301,146	3,094,993	4,848,670	3,410,670	4,297,362	3,434,556
Mexico, Foreign West Indies, and Central America	195,319	430,458	204,196	550,922	196,651	523,525
Brazil	219,643	599,206	229,667	599,457	252,782	536,331
Peru	89,449	93,331	116,954	61,690	106,281	68,182
Chili	128,700	254,283	162,959	219,156	127,584	263,002
China	182,921	66,653	183,051	68,649	167,097	34,127
Other countries	979,820	1,452,419	844,046	1,209,101	779,436	1,013,996
Total, Foreign Countries	20,708,667	23,961,422	21,934,015	23,815,262	20,814,248	22,419,224
BRITISH POSSESSIONS.						
North American Colonies	1,232,903	668,630	1,498,577	819,431	1,255,468	706,480
East Indies, including Ceylon, Singapore, and Mauritius	1,343,106	2,050,206	1,580,050	2,021,590	1,400,936	1,833,289
Australia and New Zealand	634,992	903,873	489,908	925,993	479,551	883,952
West Indies	146,861	190,582	149,767	196,457	164,664	195,291
Channel Islands	326,097	238,618	353,465	235,980	335,892	239,876
Other possessions	304,059	1,260,331	304,536	1,358,447	364,290	1,420,751
Total, British Possessions	3,988,018	5,312,240	4,376,303	5,557,898	4,000,801	5,279,639
TOTAL FOREIGN COUNTRIES AND BRITISH POSSESSIONS.						
Twelve Months ended December, '84	24,696,685	29,273,662	—	—	—	—
Twelve Months ended December, '83	—	—	26,310,318	29,373,160	—	—
Twelve Months ended December, '82	—	—	—	—	24,815,049	27,698,863

GOLD AND SILVER BULLION AND SPECIE.—(United Kingdom.) —*Declared Real Value of,* IMPORTED AND EXPORTED *for the* Years **1884-83-82.**

[000's omitted.]

Countries.	1884.		1883.		1882.	
	Gold.	*Silver.*	Gold.	*Silver.*	Gold.	*Silver.*
Imported from—	£	£	£	£	£	£
Australia	709,	23,	2,256,	33,	2,997,	55,
S. America, Brazil, Mexico, W. Indies	874,	4,408,	817,	3,831,	739,	3,630,
United States	5,072,	2,629,	10,	2,803,	6,100,	1,922,
	6,655,	7,060,	3,083,	6,667,	9,836,	5,607,
France	1,946,	1,696,	1,272,	2,070,	1,832,	2,644,
Germany, Holland, Belg., and Sweden	1,205,	434,	1,744,	336,	1,373,	598,
Portugal, Spain, and Gibraltar	410,	96,	558,	61,	766,	63,
Malta and Egypt	66,	86,	78,	29,	309,	19,
China, with Hong Kong and Japan	69,	—	199,	59,	6,	36,
West Coast of Africa	117,	69,	95,	66,	111,	51,
All other Countries	252,	160,	704,	180,	143,	226,
Totals Imported	10,720,	9,601,	7,733,	9,468,	14,376,	9,244,
Exported to—						
France	263,	633,	101,	189,	3,290,	350,
Germany, Holland, Belg. & Sweden	1,932,	57,	1,069,	391,	958,	335,
Portugal, Spain, and Gibraltar	1,573,	467,	1,452,	1,206,	1,047,	1,204,
	3,768,	1,157,	2,622,	1,786,	5,295,	1,889,
B. India, China, Hong Kong and Japan	1,393,	8,338,	935,	7,030,	1,255,	6,423,
United States	2,184,	8,	938,	49,	92,	29,
South Africa	—	—	—	11,	6,	28
S. America, Brazil, Mexico, W. Indies	1,488,	172,	1,502,	227,	769,	173.
All other Countries	3,180,	311,	1,094,	219,	4,606,	423,
Totals Exported	12,013,	9,986,	7,091,	9,322,	12,023,	8,965,
Excess of imports	—	—	642,	146,	2,353,	279,
„ exports	1,293,	385,	—	—	—	—

BRITISH CORN.—*Gazette Average Prices* (ENGLAND AND WALES) *Weekly for* 1884.

[This Table is communicated by the Commercial Department, Board of Trade.]

Weeks ended on Saturday.	Weekly Average. (Per Imperial Quarter.)				Weeks ended on Saturday.	Weekly Average. (Per Imperial Quarter.)			
	Wheat.		Barley.	Oats.		Wheat.		Barley.	Oats.
1884.	s.	d.	s. d.	s. d.	1884.	s.	d.	s. d.	s. d.
Jan. 5	39	–	32 –	19 3	July 5	37	1	27 2	23 5
„ 12	38	9	32 1	19 4	„ 12	36	9	28 2	23 1
„ 19	38	9	32 3	19 3	„ 19	37	1	28 9	22 11
„ 26	38	–	32 8	19 5	„ 26	37	1	27 5	23 4
Feb. 2	37	9	32 6	19 6	Aug. 2	37	6	27 6	22 7
„ 9	37	3	32 4	19 6	„ 9	37	6	28 3	23 1
„ 16	37	3	31 11	19 10	„ 16	38	2	29 2	22 –
„ 23	36	11	31 10	19 5	„ 23	36	4	28 3	20 9
					„ 30	35	1	32 1	20 –
March 1	37	3	31 7	19 10					
„ 8	37	7	31 5	19 11	Sept. 6	34	3	32 3	20 –
„ 15	37	7	31 3	19 8	„ 13	34	–	32 7	19 9
„ 22	37	7	31 5	19 10	„ 20	33	10	32 3	19 8
„ 29	38	1	31 3	19 10	„ 27	33	–	32 2	18 10
April 5	37	7	31 3	19 6	Oct. 4	32	4	31 9	19 –
„ 12	37	9	31 4	19 11	„ 11	32	2	32 –	19 1
„ 19	37	3	30 10	19 5	„ 18	32	4	31 11	19 –
„ 26	37	2	31 2	20 –	„ 25	32	4	31 9	18 11
May 3	37	4	30 –	20 5	Nov. 1	32	3	32 –	19 2
„ 10	38	2	30 4	20 5	„ 8	32	–	31 10	19 4
„ 17	37	10	29 9	21 –	„ 15	31	5	31 10	19 1
„ 24	38	–	29 4	20 7	„ 22	31	1	31 5	19 5
„ 31	37	7	28 9	21 2	„ 29	30	5	31 3	19 4
June 7	37	0	27 1	21 4	Dec. 6	30	10	31 2	19 2
„ 14	37	4	28 3	21 5	„ 13	30	10	31 –	19 5
„ 21	37	–	27 11	22 4	„ 20	31	5	31 3	19 4
„ 28	37	4	27 11	23 –	„ 27	31	5	31 2	19 5

BRITISH CORN.—*Gazette Average Prices* (ENGLAND AND WALES), *Summary of, for* **1884**, *with those for* **1883**, *added for Comparison.*

[This Table is communicated by the Commercial Department, Board of Trade.]

Average for	Per Imperial Quarter, 1884.						Per Imperial Quarter, 1883.					
	Wheat.		Barley.		Oats.		Wheat.		Barley.		Oats.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
January	38	7	32	3	19	3	40	2	32	5	20	7
February	37	3	32	1	19	6	40	11	33	–	21	4
March	37	7	31	4	19	9	42	3	33	6	22	–
First quarter	37	9	31	10	19	7	41	3	33	–	21	4
April	37	5	31	1	19	8	41	11	33	–	21	9
May	37	9	29	7	20	8	43	2	31	6	22	6
June	37	2	27	9	20	9	42	10	28	9	22	9
Second quarter	37	6	29	6	20	9	42	8	30	11	22	4
July	37	–	27	10	23	2	42	2	28	4	23	4
August	36	11	29	–	21	10	43	6	28	11	23	5
September	33	9	32	3	19	6	41	10	32	7	20	10
Third quarter	35	11	29	8	21	6	42	5	30	2	22	5
October	32	3	31	10	19	–	40	5	34	5	19	8
November	31	5	31	10	19	3	40	3	33	8	19	7
December	31	1	31	1	19	4	39	6	31	11	19	4
Fourth quarter	31	7	31	6	19	2	40	–	33	3	19	6
THE YEAR	35	8	30	8	20	3	41	7	31	10	21	5

REVENUE OF THE UNITED KINGDOM.

Net Produce in QUARTERS *and* YEARS *ended* 31*st* DEC., **1884-83-82-81.**

[000's omitted.]

QUARTERS, ended 31st Dec.	1884.	1883.	1884.		Corresponding Quarters.	
			Less.	More.	1882.	1881.
	£	£	£	£	£	£
Customs	5,570,	5,477,	—	93,	5,340,	5,230,
Excise	8,100,	8,300,	200,	—	8,155,	8,212,
Stamps	3,160,	2,930,	—	230,	2,850,	2,961,
Taxes	25,	30,	5,	—	30,	30,
Post Office	1,980,	1,880,	—	100,	1,830,	1,740,
Telegraph Service	430,	435,	5,	—	430,	400,
	19,265,	19,052,	210,	423,	18,635,	18,573,
Property Tax	845,	805,	—	40,	815,	618,
	20,110,	19,857,	210,	463,	19,450,	19,191,
Crown Lands	130,	130,	—	—	130,	130,
Interest on Advances	282,	385,	103,	—	385,	390,
Miscellaneous	596,	1,051,	455,	—	1,033,	1,209,
Totals	21,118,	21,423,	768,	463,	20,998,	20,920,
			NET DECR. £305,			

YEARS, ended 31st Dec.	1884.	1883.	1884.		Corresponding Years.	
			Less.	More.	1882.	1881.
	£	£	£	£	£	£
Customs	19,950,	19,810,	—	140,	19,458,	19,294,
Excise	26,527,	27,120,	593,	—	27,108,	27,252,
Stamps	11,700,	11,871,	171,	—	11,570,	11,369,
Taxes	2,860,	2,850,	—	10,	2,790,	2,745,
Post Office	7,850,	7,450,	—	400,	7,160,	6,875,
Telegraph Service	1,745,	1,750,	5,	—	1,690,	1,630,
	70,632,	70,851,	769,	550,	69,776,	69,165,
Property Tax	10,318,	12,720,	2,402,	—	9,882,	11,068,
	80,950,	83,571,	3,171,	550,	79,658,	80,233,
Crown Lands	380,	380,	—	—	380,	370,
Interest on Advances	1,013,	1,210,	197,	—	1,201,	1,232,
Miscellaneous	3,167,	4,875,	1,708,	—	5,106,	4,847,
Totals	85,510,	90,036,	5,076,	550,	86,345,	86,682,
			NET DECR. £4,526,			

LONDON CLEARING; CIRCULATION, PRIVATE AND PROVINCIAL.

The London Clearing, and the Average Amount of Promissory Notes in Circulation in ENGLAND *and* WALES *on Saturday in each Week during the Year* **1884**; *and in* SCOTLAND *and* IRELAND, *at the Dates, as under.*

[0,000's omitted.]

	ENGLAND AND WALES.				SCOTLAND.				IRELAND.		
DATES. *Saturday.*	*London:* Cleared in each Week on the preceding *Wednesday.*	Private Banks. (Fixed Issues, 3,52).	Joint Stock Banks. (Fixed Issues, 2,39).	TOTAL. (Fixed Issues, 5,91).	Average for Four Weeks ending	£5 and upwards.	Under £5.	TOTAL. (Fixed Issues, 2,68).	£5 and upwards	Under £5.	TOTAL. (Fixed Issues, 6,35).
1884.	£	£	£	£	1884.	£	£	£	£	£	£
Jan. 5.....	144,55	1,62	1,62	3,24							
„ 12.....	113,93	1,63	1,65	3,28	Jan. 12...	1,90	4,05	5,95	3,86	2,95	6,81
„ 19.....	134,35	1,61	1,64	3,26							
„ 26.....	104,49	1,58	1,61	3,20							
Feb. 2.....	128,34	1,56	1,60	3,16							
„ 9.....	119,11	1,54	1,60	3,14	Feb. 9...	1,78	3,79	5,57	3,72	2,84	6,56
„ 16.....	97,74	1,48	1,58	3,05							
„ 23.....	134,63	1,46	1,57	3,03							
Mar. 1.....	97,34	1,45	1,58	3,03							
„ 8.....	137,44	1,45	1,59	3,05	Mar. 8...	1,68	3,74	5,41	3,72	2,74	6,47
„ 15.....	96,64	1,45	1,60	3,05							
„ 22.....	123,95	1,44	1,62	3,06							
„ 29.....	101,63	1,49	1,67	3,16							
April 5.....	135,34	1,56	1,71	3,27	April 5...	1,68	3,72	5,40	3,79	2,71	6,51
„ 12.....	134,50	1,58	1,76	3,34							
„ 19.....	82,41	1,58	1,77	3,35							
„ 26.....	94,34	1,58	1,74	3,31							
May 3.....	122,77	1,59	1,74	3,33	May 3...	1,76	3,85	5,61	4,09	2,78	6,87
„ 10.....	113,59	1,60	1,75	3,35							
„ 17.....	97,92	1,58	1,74	3,32							
„ 24.....	46,86	1,54	1,70	3,24							
„ 31.....	95,48	1,52	1,66	3,18	„ 31...	2,23	4,26	6,49	3,95	2,73	6,68
June 7.....	122,05	1,51	1,64	3,15							
„ 14.....	92,63	1,48	1,60	3,08							
„ 21.....	116,18	1,46	1,67	3,12							
„ 28.....	97,33	1,47	1,56	3,03	June 28...	1,95	4,03	5,98	3,65	2,59	6,24
July 5.....	140,99	1,49	1,58	3,07							
„ 12.....	114,24	1,49	1,57	3,07							
„ 19.....	126,41	1,47	1,56	3,03							
„ 26.....	92,68	1,45	1,53	2,98	July 26...	1,80	4,00	5,81	3,53	2,54	6,07
Aug. 2.....	112,28	1,44	1,52	2,96							
„ 9.....	97,90	1,44	1,52	2,96							
„ 16.....	91,43	1,40	1,50	2,90							
„ 23.....	122,61	1,39	1,49	2,88	Aug. 23...	1,78	3,93	5,71	3,41	2,54	5,95
„ 30.....	88,59	1,40	1,49	2,89							
Sept. 6.....	119,41	1,41	1,51	2,92							
„ 13.....	91,30	1,42	1,52	2,94							
„ 20.....	115,36	1,43	1,53	2,97	Sept. 20...	1,81	3,98	5,79	3,43	2,60	6,03
„ 27.....	89,93	1,46	1,56	3,02							
Oct. 4.....	130,40	1,55	1,65	3,20							
„ 11.....	107,29	1,60	1,69	3,28							
„ 18.....	121,80	1,58	1,67	3,25	Oct. 18...	1,81	4,05	5,86	3,79	2,90	6,70
„ 25.....	98,77	1,58	1,68	3,26							
Nov. 1.....	86,43	1,57	1,68	3,24							
„ 8.....	131,30	1,57	1,69	3,27							
„ 15.....	97,04	1,55	1,68	3,23	Nov. 15...	1,97	4,23	6,20	3,98	3,06	7,04
„ 22.....	123,40	1,53	1,67	3,20							
„ 29.....	90,13	1,52	1,65	3,17							
Dec. 6.....	125,37	1,50	1,61	3,11							
„ 13.....	92,46	1,48	1,57	3,04	Dec. 13...	2,09	4,31	6,40	3,78	2,97	6,75
„ 20.....	117,44	1,47	1,56	3,03							
„ 27.....	97,51	1,46	1,56	3,02							

BANK OF ENGLAND.

Pursuant to the Act 7th and 8th Victoria, cap. 32 (1844)

[0,000's omitted.]

1	2	3	4	5	6	7
		Issue Department.			Collateral Columns.	
Liabilities.		Assets.				
Notes Issued.	Dates. (Wednesdays.)	Government Debt.	Other Securities.	Gold Coin and Bullion.	Notes in Hands of Public. (Col. 1 minus col. 16.)	Minimum Rates of Discount at Bank of England.
£ Mlns.	1884.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	Per cnt.
36,38	Jan. 2	11,02	4,74	20,63	25,62	(End of 1883) 3
36,45	„ 9	11,02	4,74	20,70	25,61	
36,44	„ 16	11,02	4,74	20,69	25,16	
36,51	„ 23	11,02	4,74	20,76	24,75	
36,45	„ 30	11,02	4,74	20,70	24,75	1884.
36,32	Feb. 6	11,02	4,74	20,57	25,03	6 Feb. 3½
36,64	„ 13	11,02	4,74	20,89	24,77	
36,97	„ 20	11,02	4,74	21,22	24,30	
37,21	„ 27	11,02	4,74	21,46	24,54	
37,48	Mar. 5	11,02	4,74	21,73	24,57	
38,33	„ 12	11,02	4,74	22,58	24,27	12 March ... 3
39,91	„ 19	11,02	4,74	24,16	24,02	
40,12	„ 26	11,02	4,74	24,37	24,65	
40,07	April 2	11,02	4,74	24,32	25,56	2 April..... 2¼
39,79	„ 9	11,02	4,74	24,04	25,71	
39,83	„ 16	11,02	4,74	24,08	25,52	
40,10	„ 23	11,02	4,74	24,36	25,80	
40,11	„ 30	11,02	4,74	24,37	25,89	
40,11	May 7	11,02	4,74	24,37	25,89	
39,70	„ 14	11,02	4,74	23,95	25,62	
39,78	„ 21	11,02	4,74	24,03	25,42	
39,88	„ 28	11,02	4,74	24,13	25,34	
39,34	June 4	11,02	4,74	23,59	25,67	
39,69	„ 11	11,02	4,74	23,94	25,29	
39,99	„ 18	11,02	4,74	24,23	25,04	
40,26	„ 25	11,02	4,74	24,51	25,32	25 June 2
39,97	July 2	11,02	4,74	24,22	26,47	
39,55	„ 9	11,02	4,74	23,80	26,22	
39,44	„ 16	11,02	4,74	23,69	26,01	
39,44	„ 23	11,02	4,74	23,69	25,75	
39,26	„ 30	11,02	4,74	23,55	25,99	
38,58	Aug. 6	11,02	4,74	22,83	26,66	
38,34	„ 13	11,02	4,74	22,59	26,34	
38,42	„ 20	11,02	4,74	22,64	26,13	
38,45	„ 27	11,02	4,74	22,70	25,80	
38,23	Sept. 3	11,02	4,74	22,48	26,01	
38,06	„ 10	11,02	4,74	22,31	25,58	
37,66	„ 17	11,02	4,74	21,91	25,26	
37,49	„ 24	11,02	4,74	21,74	25,10	
36,69	Oct. 1	11,02	4,74	20,94	26,28	1 Oct. 3
35,84	„ 8	11,02	4,74	20,09	26,25	
35,42	„ 15	11,02	4,74	19,67	25,93	
35,49	„ 22	11,02	4,74	19,74	25,67	
34,76	„ 29	11,02	4,74	19,01	25,52	29 „ ... 4
34,24	Nov. 5	11,02	4,74	18,49	25,53	5 Nov..... 5
34,11	„ 12	11,02	4,74	18,36	25,31	
34,54	„ 19	11,02	4,74	18,78	24,80	
34,75	„ 26	11,02	4,74	19,00	24,65	
35,10	Dec. 3	11,02	4,74	19,35	24,73	
35,68	„ 10	11,02	4,74	19,93	24,45	
35,86	„ 17	11,02	4,74	20,11	24,22	
35,53	„ 24	11,02	4,74	19,78	24,73	
35,56	„ 31	11,02	4,74	19,81	25,03	

—Weekly Return.

for Wednesday in each Week, during the Year **1884.**

[0,000's omitted.]

9	10	11	12	13	14	15	16	17	18
Banking Department.									
Liabilities.					Assets.				
Capital and Rest.		Deposits.		Seven Day and other Bills.	Dates. (Wednesdys.)	Securities.		Reserve.		Totals of Liabilities and Assets.
Capital.	Rest.	Public.	Private.			Government.	Other.	Notes.	Gold and Silver Coin.	
£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	1884.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.	£ Mlns.
14,55	3,12	7,90	25,84	,17	Jan. 2	14,46	25,56	10,76	,81	51,59
14,55	3,29	5,32	26,34	,18	„ 9	14,95	23,11	10,84	,79	49,69
14,55	3,30	4,80	24,95	,20	„ 16	14,45	21,26	11,28	,82	47,81
14,55	3,32	5,50	24,65	,17	„ 23	14,45	21,08	11,76	,89	48,18
14,55	3,31	6,39	23,78	,16	„ 30	14,45	11,13	11,70	,90	48,18
14,55	3,36	7,80	22,17	,19	Feb. 6	14,45	21,41	11,29	,93	48,08
14,55	3,37	8,89	22,49	,19	„ 13	13,45	23,14	11,87	1,02	49,48
14,55	3,41	10,39	23,01	,17	„ 20	13,45	24,38	12,67	1,03	51,53
14,55	3,37	11,24	23,03	,15	„ 27	13,45	24,81	12,67	1,03	51,96
14,55	3,75	12,04	23,62	,16	Mar. 5	13,45	26,74	12,91	1,02	54,12
14,55	3,75	12,06	22,55	,16	„ 12	12,45	25,54	14,06	1,05	53,10
14,55	3,77	12,95	22,98	,16	„ 19	12,45	24,98	15,89	1,09	54,41
14,55	3,78	12,45	22,57	,14	„ 26	12,45	24,46	15,47	1,11	53,49
14,55	3,78	10,50	24,26	,22	April 2	12,45	25,31	14,51	1,03	53,30
14,55	3,09	7,60	25,15	,20	„ 9	12,44	23,07	14,08	1,01	50,60
14,55	3,10	6,99	25,04	,17	„ 16	12,44	22,06	14,31	1,06	49,87
14,55	3,10	7,15	24,83	,19	„ 23	12,44	21,61	14,80	,98	49,83
14,55	3,10	7,67	23,82	,17	„ 30	12,64	21,47	14,22	,97	49,30
14,55	3,10	7,67	23,82	,17	May 7	12,64	21,47	14,22	,97	49,30
14,55	3,10	7,61	23,64	,16	„ 14	12,64	21,35	14,08	1,00	49,07
14,55	3,11	8,24	23,45	,18	„ 21	12,64	21,53	14,36	1,00	49,53
14,55	3,11	9,04	23,13	,17	„ 28	12,64	21,81	14,54	1,01	50,00
14,55	3,06	8,89	22,14	,18	June 4	12,50	21,74	13,67	,91	48,82
14,55	3,07	8,93	23,65	,17	„ 11	13,11	21,91	14,40	,95	50,37
14,55	3,07	9,89	23,76	,18	„ 18	13,61	21,98	14,95	,92	51,46
14,55	3,07	9,89	23,79	,17	„ 25	13,61	21,99	14,94	,93	51,47
14,55	3,16	9,38	24,21	,19	July 2	13,58	23,54	13,50	,86	51,48
14,55	3,33	5,87	27,06	,18	„ 9	13,58	23,18	13,33	,90	50,99
14,55	3,34	5,15	26,87	,22	„ 16	13,58	22,25	13,43	,88	50,14
14,55	3,35	5,61	26,63	,21	„ 23	13,58	22,21	13,69	,87	50,35
14,55	3,34	5,10	26,63	,20	„ 30	13,58	22,12	13,27	,86	49,83
14,55	3,38	5,34	25,12	,20	Aug. 6	13,58	22,27	11,92	,84	48,61
14,55	3,39	5,95	24,33	,20	„ 13	13,58	22,08	11,90	,85	48,41
14,55	3,43	6,15	23,76	,20	„ 20	13,58	21,36	12,29	,86	48,09
14,55	3,38	5,77	24,08	,18	„ 27	13,58	20,92	12,65	,79	47,94
14,55	3,72	5,48	23,73	,21	Sept. 3	13,58	21,03	12,22	,88	47,71
14,55	3,73	6,21	23,20	,18	„ 10	13,44	21,05	12,48	,90	47,87
14,55	3,74	6,00	23,38	,18	„ 17	13,60	20,89	12,40	,98	47,87
14,55	3,74	6,25	23,12	,18	„ 24	13,73	20,88	12,39	,85	47,85
14,55	3,74	5,92	23,53	,20	Oct. 1	13,72	22,95	10,41	,86	47,94
14,55	3,09	5,71	25,96	,22	„ 8	15,51	23,55	9,59	,88	49,53
14,55	3,11	4,41	24,53	,20	„ 15	15,21	21,31	9,49	,88	46,89
14,55	3,11	4,35	24,39	,18	„ 22	14,46	21,49	9,82	,82	46,59
14,55	3,12	3,95	24,05	,19	„ 29	14,01	21,79	9,24	,82	45,86
14,55	3,11	4,18	23,60	,17	Nov. 5	13,71	22,39	8,71	,81	45,62
14,55	3,12	4,44	22,64	,18	„ 12	13,31	21,84	8,80	,96	44,91
14,55	3,13	5,16	22,68	,16	„ 19	13,31	21,65	9,74	,97	45,67
14,55	3,11	5,60	22,29	,14	„ 26	13,31	21,35	10,10	,92	45,68
14,55	3,09	5,79	23,37	,16	Dec. 3	13,41	22,35	10,37	,83	46,96
14,55	3,09	6,36	22,87	,17	„ 10	13,16	21,78	11,23	,88	47,05
14,55	3,10	7,32	23,36	,16	„ 17	13,16	22,85	11,64	,83	48,48
14,55	3,11	8,41	21,91	,15	„ 24	13,16	23,45	10,80	,72	48,13
14,55	3,12	9,11	24,95	,15	„ 31	13,16	27,30	10,53	,88	51,87

FOREIGN EXCHANGES.—*Quotations as under,* LONDON *on Paris, Hamburg, and Calcutta;—and New York, Calcutta, and Hong Kong, on* LONDON, *for* **1884.**

1	2	3	4	5	6	7	8	9
			Calcutta.				Price per Ounce.	
DATES. (Thursdays)	London on Paris. 3 m. d.	London on Hamburg. 3 m. d.	London on Calcutta.	Indian Council Bills. Minimum Price Per Rupee.	New York on London. 60 d. s.	Hong Kong on London. 4 m. d.	Gold Bars (Fine).	Standard Silver in Bars.
1884.			*s. d.*	*d.*	Per cnt.	*s. d.*	*s. d.*	*d.*
Jan. 3	25·38⅝	20·58	1 7⅝	19½	4·82	3 9¼	77 9	50⅞
„ 17	25·37½	20·57	1 7 1/16	19 9/16	4·84½	3 8⅝	77 9	50⅝
Feb. 14	25·45	20·60	1 7 1/16	19 1/16	4·85½	3 8¼	77 9	51⅛
„ 28	25·42½	20·64	1 7⅝	19⅝	4·86⅜	3 8¼	77 9	51¼
Mar. 13	25·43¾	20·65	1 7⅞	19⅝	4·86½	3 8¼	77 9	51
„ 27	25·40	20·64	1 7⅜	19½	4·87¼	3 8	77 9	50¾
April 10....	25·38¾	20·62	1 7 1/16	19 1/16	4·87½	3 8	77 9	50 9/16
„ 24....	25·35	20·59	1 7⅞	19 5/16	4·87½	3 8½	77 9	51
May 8	25·37½	20·59	1 7⅞	19⅝	4·86¾	3 9⅝	77 9	50¾
„ 22	25·37½	20·60	1 7⅞	19⅝	4·83½	3 8⅝	77 9	50 5/16
June 5	25·37½	20·62	1 7 3/16	19¾	4·84¼	3 8⅞	77 9½	50⅞
„ 19	25·37½	20·61	1 7⅜	19 9/16	4·84¾	3 9	77 10	50⅜
July 3	25·37½	20·61	1 7 1/16	19½	4·82½	—	77 10	50¾
„ 17	25·35	20·58	1 7⅝	19½	4·83¼	3 9	77 10	50 3/16
Aug. 14....	25·38¾	20·59	1 7 1/16	19½	4·82½	3 9	77 9	50¾
„ 28....	25·35	20·56	1 7 1/16	19½	4·83	3 8⅞	77 9½	50¾
Sept. 11....	25·32½	20·56	1 7 1/16	19½	4·82¾	3 9	77 9½	50 1/16
„ 25....	25·32½	20·54	1 7 1/16	19½	4·82¼	3 9	77 9	50 3/16
Oct. 9	25·40	20·60	1 7 9/16	19 7/32	4·81¼	3 8⅞	77 9½	50⅞
„ 23	25·37½	20·57	1 7⅝	19⅝	4·80⅝	3 8½	77 10	50⅝
Nov. 6	25·45	20·62	1 7¼	19 9/16	4·79¾	3 8	77 9½	50¼
„ 20	25·46¼	20·63	1 7⅛	19⅛	4·81⅝	3 7⅞	77 9	50¼
Dec. 4	25·48¾	20·66	1 7¼	19⅛	4·81¼	3 7½	77 9	49⅞
„ 18	25·50	20·67	1 7 3/16	19	4·81	3 7	77 9	49½

JOURNAL OF THE STATISTICAL SOCIETY,

JUNE, 1885.

The Laws *of* Migration. *By* E. G. Ravenstein, Esq., F.R.G.S.

[Read before the Statistical Society, 17th March, 1885. The President, Sir Rawson W. Rawson, K.C.M.G., C.B., in the Chair.]

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Introductory Remarks.

It was a remark of the late Dr. William Farr, to the effect that migration appeared to go on without any definite law, which first directed my attention to a subject,* to which, after the publication of the census of 1881, I now propose to return. I shall confine myself in what follows to migration going on within the limits of the United Kingdom,† reserving for a future occasion a consideration of the same subject in connection with foreign countries. In his general report on the census of 1871 the registrar-general says very justly: "The improved roads, the facilities offered under the "railway system, the wonderful development of the mercantile "marine, the habit of travelling about, and the increasing know-"ledge of workmen, have all tended to facilitate the flow of people "from spots where they are not wanted to fields where their labour "is in demand. The establishment of a manufacture or the open-"ing of a new mine rallies men to it, not only from the vicinity, "but from remote parts of the kingdom. The great towns afford "such extraordinary facilities for the division and for the combina-

* See the Birthplaces of the People and the Laws of Migration in the "Geographical Magazine," 1876, with seven maps.

† That is England, Scotland, and Ireland; Man and the Channel Islands are therefore excluded.

"tion of labour, for the exercise of all the arts, and for the "practice of all the professions, that they are every year drawing "people within their limits." Farther inducements to migrate are offered by educational facilities, salubrity of the climate or cheapness of living. In a few instances, as in the case of convicts or of soldiers and sailors, migration is even compulsory.

It shall be our task to trace the extent of this migration throughout the United Kingdom, and to point out some of those laws which appear to govern it. The materials at our disposal for the performance of this task are voluminous, but they are by no means complete. Information on many points of interest is withheld in the census returns. It is impossible, for instance, to trace the natives of any particular county of England into Scotland or Ireland. Another circumstance likely to lead to misconception, if not error, arises from the very unequal size of the counties. Rutland and Yorkshire are hardly comparable. A journey of 25 miles at the most converts any native of Rutland into a "migrant," whilst a native of Yorkshire to place himself into the same position might have to travel as many as 95 miles. The exchange of population between the border counties of England and Scotland cannot be traced, nor is it possible to point out those counties of Ireland which have furnished the largest contingents of migrants to Great Britain. The emigration returns fortunately enable us to obtain an insight into this branch of our inquiry.*

Yet notwithstanding these shortcomings in the census returns, they enable us to obtain a clear insight into the mode in which migration proceeds, and the general results appear to be trustworthy.

Population and Birthplaces.

The population with which we have to deal numbered in 1871 31,484,661 souls, in 1881 34,884,848 souls, distributed as follows:—

	1871.	Per Cent.	1881.	Per Cent.	Increase, 1871-81.
					Per cnt.
England and Wales....	22,712,266	72·1	25,974,439	74·4	14·4
Scotland	3,360,018	10·7	3,735,573	10·7	11·2
Ireland	5,413,377	17·2	5,174,836	14·9	−4·9
United Kingdom	31,484,661	100·0	34,884,848	100·0	10·8

* It is to be hoped that by the time the next census is taken, so-called "Registration Counties" and "Counties proper" will have been assimilated. The registrar's districts or unions undoubtedly present the most suitable unit for summarising the ages, birthplaces, and occupations of the people. The present complex system of the territorial divisions is most confusing, and increases the volume of the returns without adding anything of real use to the information they furnish.

According to birthplaces this population was divided as follows:—

	1871.	Per Cent.	1881.	Per Cent.	Increase, 1871-81.
					Per cnt.
Born in England and Wales	21,830,528	69·34	25,017,027	71·71	14·6
„ Scotland	3,295,103	10·47	3,673,615	10·53	11·5
„ Ireland	6,081,067	19·31	5,843,406	16·75	− 3·9
„ elsewhere	277,963	0·88	350,800	1·01	26·2
Total	31,484,661	100·00	34,884,848	100·00	10·8

The details for each kingdom (for 1881) are given in the following set of tables:—

		Number.	Per Cent.
England and Wales	Born in England and Wales	24,855,822	95·69
	„ Scotland	253,528	0·98
	„ Ireland	562,374	2·17
	„ elsewhere	302,715	1·16
	Total	25,974,439	100·00
Scotland	Born in Scotland	3,397,759	90·96
	„ England and Wales	91,823	2·46
	„ Ireland	218,745	5·86
	„ elsewhere	27,246	0·72
	Total	3,735,573	100·00
Ireland	Born in Ireland	5,062,287	97·85
	„ England and Wales	69,382	1·34
	„ Scotland	22,328	0·43
	„ elsewhere	19,792	0·38
	Total	5,174,836*	100·00

* Including 1,047 persons whose place of birth is not known.

This set of tables shows very clearly that the rate at which the population of each kingdom increases does not correspond with the rate of increase among the natives of each, and that as a result the English element, as far as birthplace determines it, is gaining ground. It need hardly be pointed out that this difference is due primarily to emigration to foreign parts, and in a less degree to migration from one kingdom into the other.†

Had there been no Irish emigration between 1871-81, 530,924

† Emigration from census to census, 1871-81: English, 996,038; Scotch, 170,757; Irish, 530,924. That is of 100 emigrants 59 were English, 10 Scotch, and 31 Irish, whilst of 100 inhabitants of the United Kingdom, 72 are English, 11 Scotch, and 17 Irish.

persons of Irish birth would have remained in the kingdom, to increase and multiply, as they have done across the ocean, and the population of Ireland would have exhibited an increase, instead of a decrease. The number of Irish, however, is in reality much larger than shown by the census returns, which take note of the place of birth only, and not of parentage, and thus quite consistently record a child born of Irish parents in England as a "native of "England." If an inquiry into the parentage of our population were to be instituted, as in Canada, some very startling and undoubtedly interesting facts might be revealed as to its racial composition.

Geographical Distribution of the Natives of each Kingdom.

We will now glance at the geographical distribution of the natives of each kingdom, according to whether they remained and were enumerated in the county, had migrated to border counties, or to more distant parts of the county. The general results (1881) are presented in the following set of tables :—

		Numbers.	Per Cent.	
Natives of England and Wales enumerated in	County where born	18,699,922	74·75	
	Border counties	3,308,732	13·22	24·60
	Rest of England and Wales	2,847,168	11·38	
	Scotland	91,823	0·37	0·65
	Ireland	69,382	0·28	
	Total	25,017,027	100·00	
Natives of Scotland enumerated in	County where born	2,527,794	68·81	
	Border counties	529,163	14·41	23·71
	Rest of Scotland	340,802	9·27	
	England and Wales	253,528	6·90	7·51
	Ireland	22,328	0·61	
	Total	3,673,615	100·00	
Natives of Ireland enumerated in	County where born	4,534,699	77·61	
	Border counties	212,023	3·63	9·03
	Rest of Ireland	315,565	5·40	
	England and Wales	562,374	9·62	13·36
	Scotland	218,745	3·74	
	Total	5,843,406	100·00	
Natives of the United Kingdom enumerated in	County where born	25,762,415	74·60	96·47
	Border counties	4,049,918	11·73	
	Elsewhere in kingdom where born	3,503,535	10·14	
	Elsewhere in United Kingdom	1,218,180	3·53	
	Total	34,534,048	100·00	

We thus find that out of 34,534,048 persons born in the United Kingdom and enumerated in 1881, as many as 33,315,868, or 96·47 per cent., resided in the kingdom in which they were born. Among every 100 natives of England and Wales, 99·35 were in that position; among every 100 natives of Scotland, 92·49; and among every 100 natives of Ireland, 86·64. The Irish therefore appear to be the most migratory people of the three kingdoms; and if we bear in mind that they furnish at the same time, proportionately to their numbers, by far the largest contingent of trans-oceanic emigrants, we may safely assume that whatever decrease may have occurred in the population of Ireland, there is no decrease in the number of Irishmen.

But if, instead of confining ourselves to the migration from kingdom to kingdom, we include that which is going on within the limits of each, from county to county, we shall find that the Irish are second to the Scotch and English as a migratory people. In 1881 25,762,415 persons were enumerated in the county in which they were born, and 8,771,633 elsewhere; and whilst among 100 natives of England and Wales enumerated throughout the United Kingdom there were 25·25 who resided beyond the county in which they had been born, the proportion of Scotch in a similar position was 31·32, that of the Irish only 22·39. Here therefore the Scotch hold the first rank, whilst the Irish, notwithstanding the large contingent which represents them in the sister kingdoms, come last.

The Scotch also come first if we look at each kingdom separately, for out of every hundred natives of England and Wales, Scotland and Ireland, there were enumerated:—

		In County where Born.	In Border Counties.	Elsewhere, but in same Kingdom.
Natives of	England and Wales	75·23	12·42	12·35
	Scotland	74·40	15·58	10·02
	Ireland	89·58	4·19	6·23

The more active migration of Great Britain is only what might have been expected from its larger size, its higher commercial and industrial development, the greater variety of its resources, and more extended facilities for travel. Migration within the limits of Ireland is strikingly small, nor need this be wondered at where nearly all counties are agricultural. There is no mistaking the fact however that migration in Ireland tends towards the ports of embarkation for Great Britain, whence the surplus population is poured into the great manufacturing and mining districts of Scotland, North England, and Wales.

The National Element of the Population in England, Scotland, and Ireland.—If by "national element" of the population we understand those inhabitants of the United Kingdom who, on the day of the census, were enumerated in the kingdom in which they were born, we shall find that they numbered no less than 34,534,048 souls, or 98·99 per cent. of the total population, distributed as follows:—

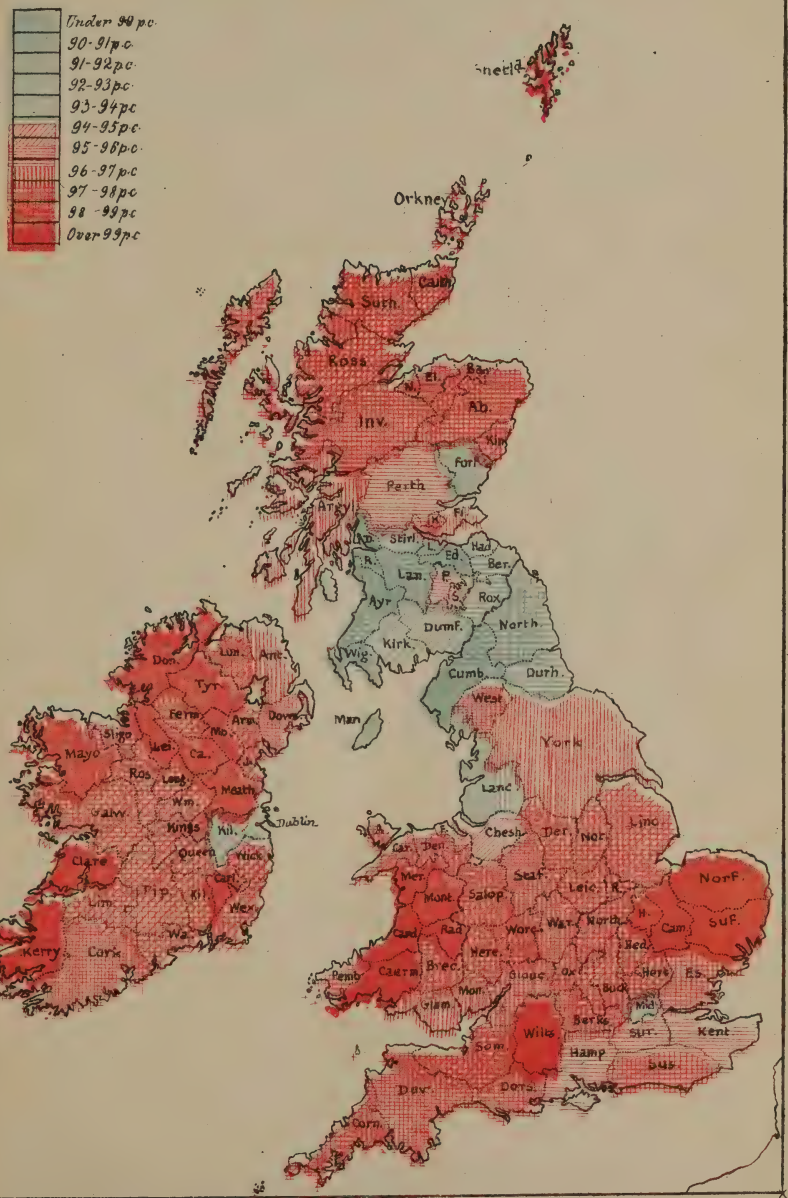
	1871.	1881.	Per Cent.	
			1871.	1881.
England and Wales.....	21,692,165	24,855,822	95·53	95·69
Scotland	3,061,531	3,397,759	91·12	90·96
Ireland	5,306,757	5,062,287	98·00	97·85
United Kingdom (imperial element).....	31,231,300	34,534,048	99·20	98·99

These proportions are just what might have been expected. The natives of Ireland have been least encroached upon by immigrants from the sister kingdoms or from abroad, whilst Scotland has profited most largely, and England to a smaller extent (as far as mere numbers go) by an influx of immigrants from the sister isle. It should be stated, however, that this influx of Irish immigration has for the time passed its zenith, and is going on now at a slower rate than was the case some fifteen years ago. This diminution accounts too for the increase of the national element which has taken place since 1871 in England, for the children of natives of Ireland born in England at once take their place among the English national element.

Our figures show very clearly that the national element is strongest in Ireland: Ireland in fact is more intensely Irish than Scotland is Scotch, or England English. In twenty-seven counties out of a total of thirty-two the national element embraces more than 98 per cent. of the total population, and only in two counties does it fall below 95. These two are Dublin and Kildare, and the depression in their case is sufficiently explained by the presence of many strangers in the capital of the kingdom, and of a strong military force on the Curragh of Kildare. The most intensely Irish counties are Leitrim and Cavan, where natives of Ireland constitute 99·4 per cent. of the population.

In Scotland, out of a total of thirty-three counties, there are only ten in which the Scotch national element exceeds 98 per cent. whilst in sixteen it falls short of 95 per cent. The depression is greatest in Renfrew, Lanark, Dumbarton, and Southern Scotland generally; in fact, in those counties which are most exposed to an inflow of the Irish element or of the English border element.

THE NATIONAL ELEMENT.



The most intensely Scotch counties are Shetland, Caithness, Sutherland, Orkney, Ross, Banff, Kinross, and Kincardine, in all of which the national element exceeds 98 per cent.; the most intensely Scotch towns, Dunfermline (97·26 per cent.), Arbroath, Aberdeen, and Inverness. Even Edinburgh-Leith includes a Scotch national element of 89·51 per cent. Those towns in Scotland in which strangers are most numerous are Greenock (79·5 per cent.), and Glasgow (82·8 per cent.).

In England and Wales, out of a total of fifty-two counties there are thirty-one in which the English national element exceeds 98 per cent., and six in which it sinks below 95 per cent. It exceeds 99 per cent. in the agricultural counties of Cambridge, Hunts, Norfolk, Suffolk, Merioneth, Montgomery, Radnor, Cardigan, and Carmarthen, and is weakest in the Scotch border counties of Cumberland and Westmoreland.

The most intensely English towns are West Bromwich, Norwich, Ipswich, Leicester, and Northampton, in all of which the national element exceeds 98 per cent.*

Liverpool is that one among the towns of England in which the number of strangers of non-English birth is proportionately larger than in any other town of the kingdom, and Birkenhead ranks next to it. In Liverpool only 80·61 of every 100 inhabitants are of English birth. This depression of the national element is almost wholly due to the large number of Irish. In the metropolis the national element is as high as 93·80 per cent., although numerically the Irish, Scotch, foreign and colonial elements of the population are stronger than in any other town of the United Kingdom. London therefore has the character of a cosmopolitan town, although the proportion which its cosmopolitan element bears to the general population is less than in several provincial towns.

The Native County Element.—Under this term we include those inhabitants of a county who are born within it, or of a town who are natives of the county to which it belongs. In the case of towns lying within two counties we have included the natives of both under the term of "native county element."

Whilst the proportion of the "national element" is dependent upon the number of strangers from the sister kingdoms or from abroad who have settled in a county or town, the "native county "element" is the outcome of migration from county to county.

If we analyse the census returns, we find that in 1881 25,762,415 persons were enumerated in the counties in which they were born.

* To these should be added, according to the census of 1871, Yarmouth, Salisbury, Bury St. Edmunds, Reading, Boston, Cambridge, Dudley, Exeter, Oxford, and Truro. No details are furnished for these towns for 1881

This number is equal to 73·85 per cent. of the total population of the United Kingdom, or to 74·60 per cent. of all enumerated natives of England, Scotland, and Ireland. The following summary shows that this native county element has not inconsiderably decreased since 1871, which shows that migration has increased to a corresponding extent. The increase was largest in England (6·3 per cent.); Scotland followed next (2·0 per cent.), and then came Ireland (1·8 per cent.), the mean for the United Kingdom having been 3·2 per cent.

	1871.	Per Cent. of Population.	Per Cent. of Natives.	1881.	Per Cent. of Population.	Per Cent. of Natives.
England and Wales....	16,921,436	74·04	77·51	18,699,922	72·00	74·75
Scotland	2,315,458	68·90	70·24	2,527,794	67·67	68·81
Ireland	4,804,959	88·73	79·00	4,534,699	87·63	77·61
United Kingdom	24,041,853	76·36	77·04	25,762,415	73·85	74·60

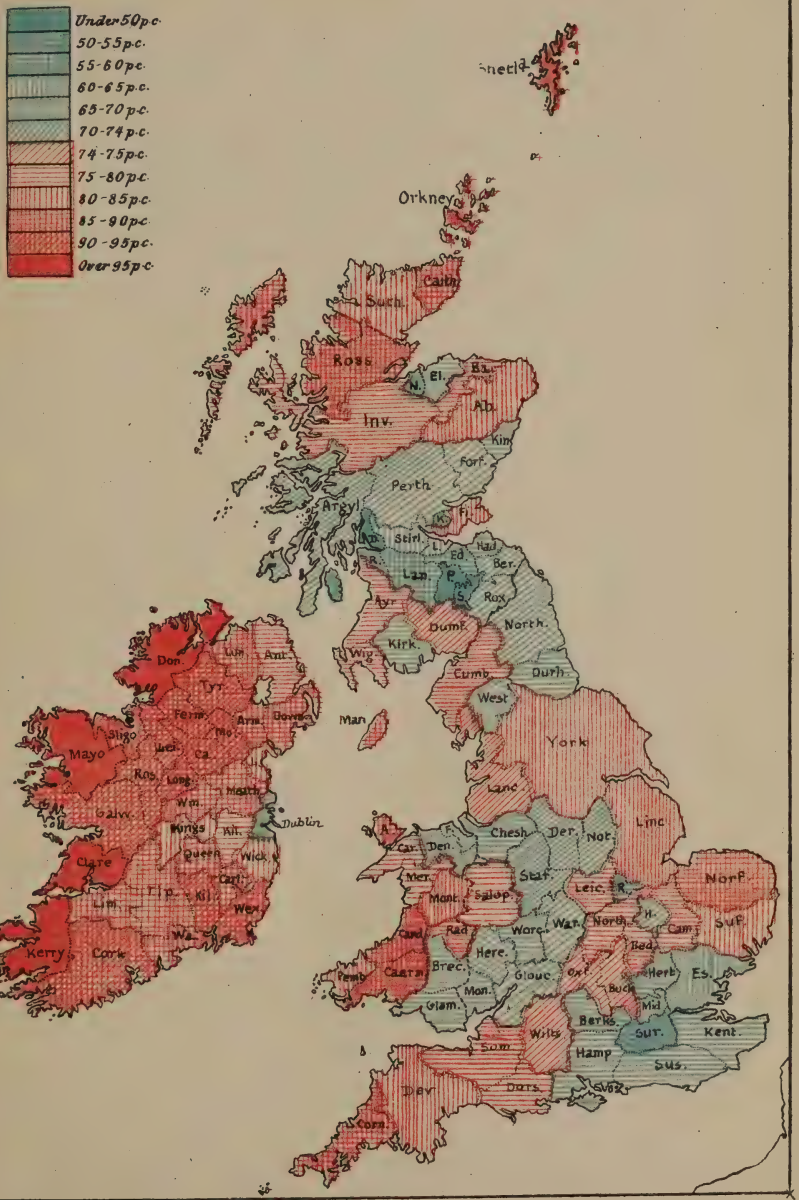
The proportion of the native element for each county is shown on Map 2, and more precise data will be found in the appendix. On the map those counties whose native county element approaches the mean for the whole of the United Kingdom are left uncoloured, whilst counties in which it is stronger are tinted blue, and those where it is weaker are tinted red. The native county element is strongest in the more remote parts of the country, as in the extreme north of Scotland, in the west of Ireland, in parts of Wales, in Cornwall, and in Norfolk.

Our map, we regret to say, is in a certain measure misleading. A true representation of this feature could be obtained only if the counties were approximately equal in area. It is clear, for instance, that if the figures given in the census returns had enabled us to divide Yorkshire into its three ridings, the native county element would have suffered a depression, whilst in the case of small counties like Rutlandshire it would relatively to larger counties appear unduly to preponderate.

In the case of towns the preponderance of the native county element depends largely upon geographical position. A town centrally situated, and thus accessible with equal facility from all parts of its county would in the ordinary course secure a larger share of this element than a border town.

The Native Town Element.—We should have liked to trace the natives of our great towns throughout the country, but the published census returns only allow us to do this in the case of London and of seven Scotch towns. In London the native town

THE NATIVE COUNTY ELEMENT.



element constitutes 62·9 per cent. of the general population, in the seven Scotch towns only 52·4 per cent., as follows :—

Aberdeen	56·5	Greenock (M.B.)	50·0
Dundee	55·1	Paisley	61·8
Edinburgh-Leith	50·8	Perth	48·0
Glasgow (M.B.)	51·3		

Its smallness, when compared with the native county element, very distinctly suggests the recruiting process, which causes our towns to increase more rapidly in population than the country which surrounds them. Migration, and more especially emigration beyond the limits of the kingdom, tend to the same result. Migration properly so called is not at all excessive, for out of 100 natives of London only 19·6, and of the seven Scotch towns no more than 27·9, were enumerated outside the towns in which they were born. Emigration to the sister kingdoms or to other parts of the world is more considerable if we may judge from the fact that there are 111 females to every 100 natives of the seven Scotch towns, and 112 to every 100 natives of London.

The Border Element includes those inhabitants of a county who were born in the counties contiguous to it. It varies very considerably, not only in consequence of migration proceeding more or less actively, but also because of the geographical configuration of the county boundaries. Counties having an extended boundary in proportion to their area, naturally offer greater facilities for an inflow of the border element than others with a restricted boundary. A long maritime boundary is usually deterrent, except where a county has facile communication with a county across the sea, facing it. A glance at the map showing the distribution of the Irish element in Great Britain at once brings this fact home to us.

The counties in which the border element is strongest are Surrey, Essex, Brecon, and Worcester; Dumbarton, Peebles, Selkirk, Linlithgow, Clackmannan, Kinross, Kincardine, and Nairn in Scotland; and Antrim in Ireland. The proportion for each is given in the table in the appendix under "Border Element."

The Irish Element in Great Britain.—The Irish element in Great Britain is of considerable importance, and since 1871 it is once more increasing, if not proportionately to the total population, at all events in absolute numbers, even although the children born of Irish parents in Great Britain be necessarily excluded, owing to the absence of data with respect to them.

In 1851 there lived in Great Britain 727,326 natives of Ireland; in 1861, 805,637; in 1871, 774,310; and in 1881, 781,119. The numbers for 1871 and 1881 were :—

	1871.	Per Cent. of Population.	1881.	Per Cent. of Population.
In England and Wales.....	566,540	2·49	562,374	2·17
„ Scotland.....	207,770	6·18	218,745	5·86

There are fifteen counties in which the Irish element exceeds 3 per cent. of the total population, and fourteen towns, out of sixty-six included in our tables, in which it exceeds 5 per cent. The counties most affected by natives of Ireland are Renfrew, Lanark and Dumbarton in Scotland, and Lancashire in England. The towns containing among their inhabitants over 10 per cent. natives of Ireland are Greenock (19·1 per cent.), Glasgow (13·1 per cent.), Liverpool (12·8 per cent.), and Airdrie (10·2 per cent.).*

There is not a single county in which natives of Ireland have not found a home, whilst their geographical distribution, proportionately to the total population, shows very distinctly that proximity to Ireland and facilities of communication with the sister island most decidedly determine their numbers. Glasgow and Stranraer, Siloth and Whitehaven, Fleetwood and Liverpool, Milford Haven, Swansea, Cardiff and Bristol, Plymouth, Southampton and Portsmouth, are evidently the ports where most of these immigrants disembark, at which many of them find a permanent home, and whence, in search of employment, they spread to the more remote parts of the country. This process of dispersion becomes at once clear to us when we examine a map showing the leading steamboat routes, and the proportion of emigrants which left each county of Ireland for Great Britain. This last we are able to do since 1876, in which year the "Emigration Statistics for "Ireland" for the first time furnish information on the numbers of natives of each county of Ireland, who have emigrated to Scotland on the one hand, and to England and Wales on the other. We have summarised these statistics for six years—1876-81. They show that of 42,297 natives of Ireland who during that period emigrated to Scotland, as many as 28,061 were natives of Antrim, Down, Londonderry, Tyrone, and Armagh. The majority of emigrants from the province of Ulster, and of the counties of Leitrim and Longford who left Ireland for Great Britain went to Scotland, whilst the majority from the remainder of Ireland found its way to England and Wales. Ulster, with Leitrim and Longford, in 1876-81, despatched 36,296 emigrants to Scotland, and only 17,086

* Of 10,000 natives of Ireland enumerated in England and Wales, as many as 5,567 lived in the forty-four great towns included in our table in the appendix.

THE IRISH ELEMENT IN GREAT BRITAIN.

The Tints indicate the Proportion of Natives of Ireland in the General Population.

Country. Towns.

- Over 8 p.c.
- 4-8 p.c.
- 2-4 p.c.
- 1-2 p.c.
- 0·50-1 p.c.
- Under 0·50 p.c.

EMIGRATION TO FOREIGN PARTS AND COLONIES 1876-81.

Annual Average in p.c. of Population.

- Under 0·50 p.c.
- ·50-·60 p.c.
- ·60-·70 p.c.
- ·70-·80 p.c.
- ·80-·90 p.c.
- ·90-1·00 p.c.
- 1·00-1·10 p.c.
- 1·10-1·20 p.c.
- Over 1·20 p.c.

EMIGRATION from IRELAND to GREAT BRITAIN 1876-81

- Under 0·40 p.c. per an.
- ·10-·20 p.c.
- ·20-·30 p.c.
- ·30-·50 p.c.
- ·50-·70 p.c.
- Over ·70 p.c.

Londond.
Belf.
Drogh.
Dublin
Limerick
Wat.
Cork
Inver.
Aberdeen
Dundee
Dumfries
Newcastle
Sunderland
Middlesbro'
Derry
Sligo
Ballina
Brad.
Leeds
Hull
Fleetw.
Liverp.
Manch.
Sheff.
Stocp.
Lincs.
Derby
Nottingh.
Norw.
Leic.
Wolves
Birm.
North.
Wrexham
Chest.
Bristol
W.Ham.
Croydon
Southpn.
Portsm.
Brighton
Exm.
Plym.

to England and Wales, whilst out of the remainder of Ireland only 6,001 went to Scotland, but as many as 35,993 to England and Wales, and of this last number Cork alone furnished 17,291, and Kerry, Limerick, Wexford, and Dublin 9,430 more. This renders it perfectly clear that the destination of these Irish emigrants is most decisively determined by geographical position. So powerful is the attraction which Scotland exercises upon its nearest neighbour Antrim, that the number of emigrants who left that county in 1876-81 for Scotland was larger than the number which crossed the ocean for foreign parts or the colonies. The currents of emigration from Wexford and Cork are affected in a similar manner, though not to the same extent. Wexford, out of every 100 emigrants, sends 57 abroad, 42 to England and Wales, and only one to Scotland; whilst Cork sends 60 abroad, 39 to England and Wales, and one to Scotland.

The most productive recruiting grounds of the Irish element in Great Britain is consequently not the west of Ireland, as had been supposed before trustworthy information had been procured by the registrar-general for Ireland, but Ulster, Dublin, Wexford, and Cork (with Kerry and Limerick). And whilst Ulster and Dublin furnish the bulk of Irishmen who settle in Scotland and the north of England, it is Wexford and Munster whence most of the natives of Ireland residing in southern Wales and England are derived. This origin of the Irish residents very satisfactorily explains the sporadic occurrence of the Irish element in southern Britain. Of the Irish emigrants who land at Milford Haven many remain in Pembrokeshire, thus raising the Irish element in that county, whilst at the same time impelling many of its natives to migrate. Steamers from Waterford, Cork, and Wexford convey Irish emigrants direct to Swansea, Cardiff, and Bristol; whilst the steamers which connect Cork with London, land many of their passengers at Plymouth, or at Southampton or Portsmouth, thus accounting for the comparative strength of the Irish element in Devonshire and Hampshire, through which latter county many of these emigrants appear to make their way to Surrey and to London.*

In the following table the leading facts connected with the emigration of natives of Ireland in 1876-81 are summarised. It is

* Map 3 is intended to illustrate the geographical distribution of the Irish element in Great Britain, proportionately to the total population of counties and towns, as well as emigration from Ireland to Great Britain as also as to foreign parts and colonies. The lower map of Ireland exhibits the emigration to Great Britain, the upper one that to foreign countries and the colonies. The tints on both indicate the average annual rate of emigration for the years 1876-81 per 100 of the natives of counties, as enumerated in 1881. The counties tinted blue are below, those tinted red above the average for the whole country.

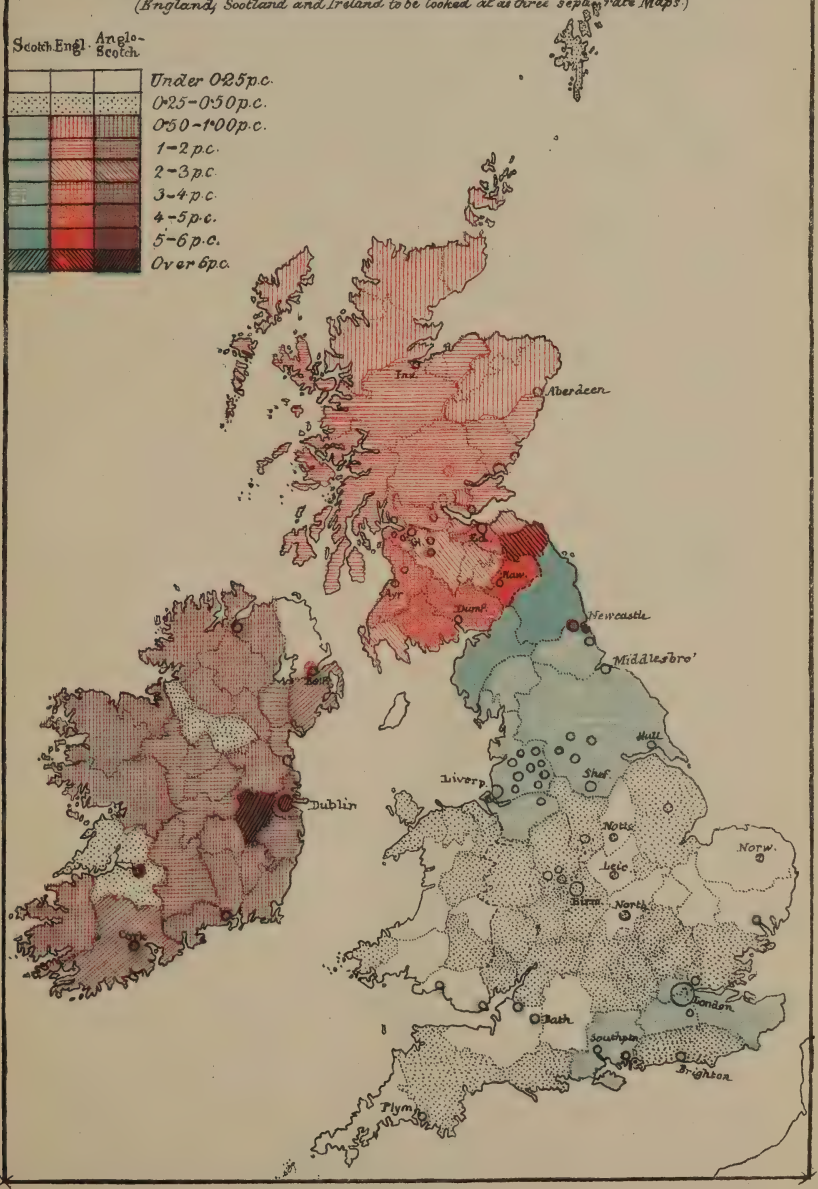
based upon the "Emigration Statistics for Ireland," prepared by Dr. Thomas W. Grimshaw, the registrar-general, with the exception of the last column, which is taken from the "Census of "Ireland, 1881, General Report," p. 379.

Counties.	Emigration of Natives of Ireland, 1876-81.								Emigration, 1861-81.
	Destination.			Percentage.			Average Annual Rate per 100 of Natives of each County.		Average Annual Rate per 100 of Population.
	England and Wales.	Scotland.	Foreign Parts and Colonies.	England and Wales.	Scotland.	Foreign Parts.	Great Britain.	Foreign Parts.	
Antrim	6,657	11,820	10,658	22	41	37	0·87	0·50	1·35
Armagh	1,891	3,678	4,525	19	37	44	0·55	0·44	1·14
Carlow	293	14	2,614	10	1	89	0·10	0·82	1·17
Cavan	646	1,520	8,233	6	15	79	0·26	1·01	1·61
Clare	600	65	12,541	5	1	94	0·08	1·45	1·78
Cork	17,291	663	26,658	39	1	60	0·62	0·93	1·95
Donegal	543	2,922	9,829	4	22	74	0·27	0·78	1·02
Down	3,822	5,282	5,455	26	36	38	0·53	0·32	1·09
Dublin	3,244	815	7,110	29	7	64	0·24	0·61	0·60
Fermanagh	406	1,269	3,825	7	25	68	0·32	0·73	1·26
Galway	834	356	13,191	6	2	92	0·08	0·91	1·29
Kerry	1,983	36	14,969	12	—	88	0·17	1·24	1·68
Kildare	617	98	3,037	16	3	81	0·16	0·67	0·88
Kilkenny	369	54	4,116	8	1	91	0·06	0·67	1·08
King's	292	136	3,876	7	3	90	0·10	0·90	1·44
Leitrim	343	771	7,405	4	8	88	0·20	1·34	1·48
Limerick	2,048	277	11,447	15	2	83	0·22	1·06	1·90
Londonderry	1,168	4,031	7,750	9	31	60	0·54	0·81	1·33
Longford	276	331	4,831	5	6	89	0·16	1·30	2·04
Louth	287	192	1,888	12	8	80	0·11	0·42	1·02
Mayo	751	399	13,425	5	3	92	0·08	0·91	1·06
Meath	208	103	4,071	5	2	93	0·05	0·76	1·49
Monaghan	775	1,422	4,248	12	22	66	0·33	0·65	1·38
Queen's	405	101	4,410	8	2	90	0·10	0·92	1·28
Roscommon	548	152	7,381	7	2	91	0·09	0·93	1·33
Sligo	233	108	7,709	3	1	96	0·05	1·16	1·06
Tipperary	1,038	60	12,356	8	1	91	0·09	1·01	1·85
Tyrone	1,559	3,250	10,131	10	22	68	0·38	0·81	1·35
Waterford	472	50	6,817	7	1	92	0·08	1·04	1·44
Westmeath	276	256	3,463	7	6	87	0·11	0·76	1·30
Wexford	2,155	44	2,858	42	1	57	0·28	0·36	1·18
Wicklow	626	75	1,915	24	3	73	0·13	0·36	0·71
Total	53,079	42,297	242,837	15	13	72	0·31	0·80	1·42

The Scotch Element in England and Wales.—The natives of Scotland enumerated in England and Wales in 1841 constituted 0·65 per cent. of the total population. In 1881 they constituted 0·98 per cent., and numbered 253,528 souls. Numerically they are not therefore very strong when compared with the natives of Ireland, but their geographical distribution is interesting as illustrating

THE SCOTCH ELEMENT IN ENGLAND, THE ENGLISH ELEMENT IN SCOTLAND, THE ANGLO-SCOTCH ELEMENT IN IRELAND.

(England, Scotland and Ireland to be looked at as three separate Maps.)



the mode of migration. There are altogether thirteen counties in which natives of Scotland number over half a per cent. of the population, and these counties form two distinct groups, viz., a northern one, into which the population of Scotland may be said to have overflowed, and a metropolitan group, to which Scotch migrants have been drawn by special circumstances. The northern group includes Cheshire and Yorkshire and all that lies to the northward, and within it reside 5,699 of every 10,000 natives of Scotland enumerated; the metropolitan group includes Middlesex, Surrey, Kent, Essex, Hampshire, and Sussex, and within it 2,942 of every 10,000 natives of Scotland were enumerated. Proportionately to the total population of the counties, the Scotch element is most numerous in Northumberland (5·39 per cent.) and Cumberland (4·87 per cent.), that is in the border counties. It decreases as we proceed southward, amounting to 2·85 per cent. in Durham, to 1·63 per cent. in Westmoreland, to 1·62 per cent. in Lancashire, to 1·22 per cent. in Cheshire, and to 0·67 per cent. in Yorkshire. In the metropolis the Scotch number 1·30 per cent. of the population; in Hampshire 0·97 per cent., a high proportion, undoubtedly due to the presence of numerous Scotch soldiers and sailors.

More than one-half of the natives of Scotland enumerated in England and Wales (5,178 out of every 10,000) resided in the forty-three great towns included in our table in the Appendix, but there were only two towns, Newcastle, with Gateshead, and South Shields, in which the Scotch constituted more than 5 per cent. of the total population.

The English Element in Scotland, proportionately to the population of Scotland, is stronger than the Scotch element in England, and if, as a matter of fact, the Scotch can be said to invade England, there is a very strong counter-current of English migration into Scotland. If for every 100 Scotchmen in England and Wales there are only 36 natives of England in Scotland, the proportion which these latter bear to the total population of Scotland is as 2·46 to 100, whilst the Scotch element in England and Wales only amounts to 0·98 per cent. In its geographical distribution this English element in Scotland exhibits the same features already noticed in connection with the Scotch settlers in England, that is to say, it is strongest in the border counties. Out of 91,823 natives of England and Wales enumerated in Scotland, as many as 57,427, or 62 per cent., reside in the counties of Berwick, Roxburgh, Dumfries, Edinburgh, Kirkcudbright, and Lanark; the proportion to the total population of these counties varying between 6·41 and 3 per cent., and being highest in the three border counties. London and other more distant parts of England have no doubt furnished their contingents to this body of English emigrants, but it is clear

that the bulk of them are natives of the north of England, just as the bulk of the Scotchmen enumerated in England came from the south of Scotland.

The Anglo-Scotch Element in Ireland.—The number of natives of Scotland and England (with Wales) enumerated in Ireland was 88,199 in 1871, and 91,710 in 1881, thus exhibiting an increase of 3,511 souls. This increase is largely due to an increase of the floating population as represented by the army and navy. Of the natives of Scotland and England enumerated in 1871, 18,464 were soldiers and sailors. In 1881 the number of these had risen to 19,192. The presence of this floating military population materially affects the composition of several Irish counties, and more especially of Kildare, where the camp on the Curragh accounts for the fact that 6·13 per cent. of the total population of the county is of Scotch or English birth. This is a higher proportion even than in Dublin (5·66 per cent.). Besides Kildare and Dublin the only counties in Ireland in which the Anglo-Scotch element constitutes over 2 per cent. of the total population are Antrim (2·86 per cent.), Cork (2·35 per cent.), and Down (2·02 per cent.). These are the very counties which furnish exceptionally large contingents of migrants who leave Ireland for Great Britain. In the five counties named 57,522 natives of Scotland and England were enumerated in 1881, being 62 per cent. of the total Anglo-Scotch element in Ireland.

The Foreign and Colonial Element.—This element increased between 1871 and 1881 from 277,963 to 349,750 souls, or to the extent of nearly 26 per cent. It included in 1881 145,860 natives of British colonies and possessions, 203,890 natives of foreign parts, of whom perhaps 70,000 were "British subjects" by parentage or nationalization. The natives of "foreign parts," inclusive of persons "born at sea," increased 24·7 per cent., the natives of British possessions 26·5 per cent. The bulk of these latter is undoubtedly of British parentage.*

A considerable proportion of this element consists of temporary residents in the country, for it includes colonists and their children on a visit to relatives at home, foreign travellers on pleasure or on business bent, sailors, and students. At the same time the number of those who have made the United Kingdom their permanent home is considerable, and the influence which these foreign settlers

* The census returns do not, unfortunately, admit of our entering into more detail. Full details on the ages, civil condition, and occupations of "foreigners" are given, but persons of foreign birth who have undergone the simple process of naturalization are excluded from the voluminous tables dealing with these subjects. The question of parentage or nationality, although all-important, is ignored, and the natives of "islands in the British seas" are dealt with as if Man and the Channel Islands formed a geographical unit.

have exercised for centuries past upon the character of the general population must not be underrated.*

The foreign and colonial element has its representatives in every county, but its chief centres are the great towns, in twenty-eight of which 196,365 persons of foreign or colonial birth, or 56 per cent. of all, were enumerated in 1881. London alone included 111,624 of them, Liverpool 15,768, Manchester-Salford 9,028, Edinburgh-Leith 6,165, Glasgow 5,720, Birmingham 3,440, Hull 3,281, Portsmouth (mostly from the Channel Islands) 3,271, Leeds 3,259, West Ham 2,902, Bristol 2,824, Cardiff 2,714, Newcastle-Gateshead 2,420, Brighton 2,366, Dublin 2,015. It will be observed that all these towns are centres of business or industry, with the exception of Bath and Brighton.

Classification of Migrants.

Our personal experience, however limited, enables us to say that the distances which migrants travel before their place of residence is recorded in one of our periodical census returns, vary very widely. Some of these migrants hail no farther than from the next parish; others are natives of a neighbouring county; others again have come from a more remote part of the kingdom, or even from beyond sea. And when we inquire into the motives which have led these migrants to leave their homes, they will be found to be various too. In most instances it will be found that they did so in search of work of a more remunerative or attractive kind than that afforded by the places of their birth. It may be worth while to attempt a classification of migrants.

The local migrant confines himself to moving from one part of the town or parish in which he was born to another part of the same town or parish. The only place in the United Kingdom in which we can trace this local migration on the sure foundation of the census returns is London. Out of every 100 of the 2,401,955 native residents enumerated in London, 59·7 were natives of Middlesex, 23·8 of Surrey, and 6·5 of Kent;† but as out of every 100 only 66·2 were enumerated as residing in Middlesex, whilst 27·1 were enumerated in Surrey and 6·7 in Kent, a considerable migration from Middlesex into Surrey and Kent must have been going on within the limits of the metropolis. As a matter of fact only 86·7 out of every 100 natives of London thus enumerated were living on the day of the census in the county in which they were born. That a like displacement of the population is in pro-

* Already in 1580 there resided 5,060 foreigners in London, which at that time had 150,000 inhabitants. The "foreigners" were therefore relatively more numerous three hundred years ago than they are now, even though we include among them the natives of all the colonies.

† That is of the intra-metropolitan parts of these counties.

gress in other towns of the United Kingdom cannot be doubted. That this is the case with respect to Manchester is evidenced by a decrease of the population of that town, which is more than balanced by an increase in its twin-city Salford. Similarly Glasgow grows but slowly in population, whilst its suburbs increase at a rapid rate. An interesting and suggestive paper by Dr. Longstaff, which deals with this branch of our inquiry, will be found in the "Charity Organisation Reporter" for 1883 and 1884.

Short-journey Migrants.—If our census returns enabled us to analyse the inhabitants of each parish or registrar's district according to birth places, we should find that the bulk of migrants had journeyed but a very little distance. Even with counties as large as Yorkshire, and with no information on the migration which goes on across the Scotch border, we find that of every 100 migrants enumerated in England and Wales, as many as 53·7 had gone no further than a border county. In Scotland 60·8 per cent. of all migrants were enumerated in border counties; in Ireland 40·2 per cent. The low proportion for Ireland is ascribable to the migration from Ireland to Great Britain, and would at once be reversed if we treated Lanark and Lancashire as border counties of Ireland.

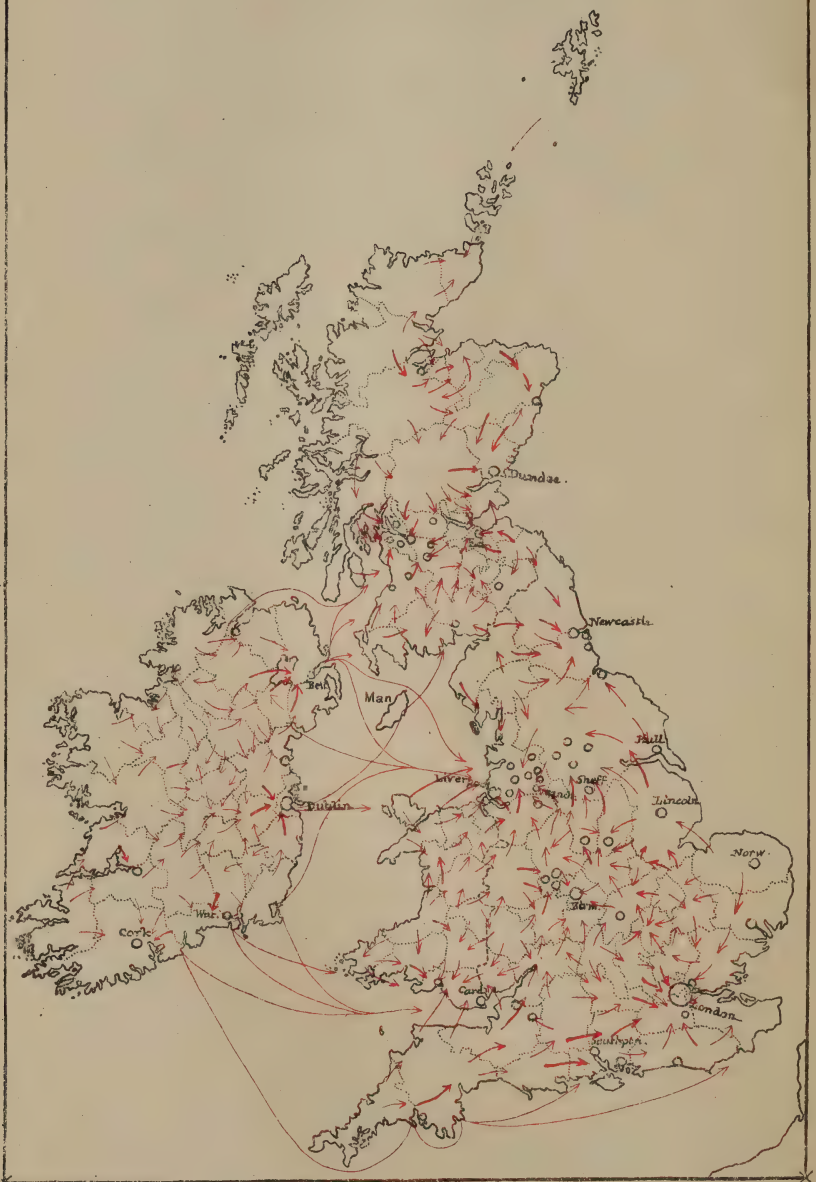
The distribution of the migrants for the whole of the United Kingdom is exhibited in the following tabular statement:—

	Proportion of Migrants Enumerated in		
	Border Counties.	Elsewhere in same Kingdom.	Sister Kingdoms.
Migrants of Anglo-Welsh birth	52·4	45·1	2·5
„ Scotch birth	46·0	29·8	24·2
„ Irish „	16·2	24·1	59·7
„ British „	46·2	39·9	13·9

The proportions refer, as a matter of course, to migration from county to county only. Fortunately the proof that migrants are as a rule content with going but a very short distance from their homes is furnished by the census of Holland. Of every 100 migrants enumerated in Holland in 1879, 69 resided outside the commune in which they were born, but in the same province, and only 31 had left their native province.* Applying these proportions to the United Kingdom, 57 per cent. of all migrants would

* On an average each province of Holland has an area of 1,150 square miles and 384,000 inhabitants. The average for the counties of the United Kingdom is 1,030 square miles and 298,000 inhabitants. Provinces and counties are consequently fairly comparable.

CURRENTS OF MIGRATION.



reside outside the parish in which they were born, 18 per cent. in border counties, and 25 per cent. elsewhere. Of course these figures are not absolutely correct, but they are hardly in excess of the truth. They prove that the bulk of migrants consists of what, for want of a better term, I designate as short-journey migrants.*

Migration by Stages.—It often happens that a migrant in search of work wanders from parish to parish, settling down at each place for a time, until on the day when the census is taken he finds himself far away from the place from which he originally started. There can be no doubt, for instance, that many if not most of the natives of Ireland to be found in London did not travel from their homes in Ireland direct to their present place of residence, but reached it by stages. Some of them landed at Liverpool, and gradually worked their way through Cheshire, Stafford, Warwick, Northampton, and Buckingham, whilst another stream, and perhaps the more voluminous one, passed through Plymouth, Hampshire, and Surrey.

Long-journey migrants who leave their homes in order to settle in a distant part of the country are the exception, not the rule, and do not probably constitute 25 per cent. of all migrants. Their movements are dependent upon special circumstances, some of which we shall consider in the sequel.†

Temporary migrants are an important class, whose existence is vouched for by the size of our hotels, barracks, prisons, and colleges, as well as by the number of sailors, many of whom must have been enumerated at ports lying outside the counties in which they were born. These temporary migrants constitute the floating element of the population, which is swamped in large towns of complex composition, but makes its presence felt very decisively at our naval and military stations, at health and pleasure resorts, in university towns, and in places abounding in boarding schools. It is a special feature of these temporary dwellers among strangers that many of them are migrants by compulsion and not by choice. The hop-pickers, who annually leave London for Kent and Surrey, and the agricultural labourers from the West of Ireland, who assist

* Migration in Holland is going on at a far less active rate than in the United Kingdom. Of 100 natives of Holland, as many as 90 live in their native province, whilst of 100 natives of the United Kingdom, only 75 live in their native county.

† In our tables the proportion of these migrants is made to appear larger than it really is. Had we been in a position to substitute a "border zone" five times the area of the central county, for "border counties" bounded by arbitrary political boundaries, we might have obtained a truer measure of this element. This we found it impossible to do. A glance at our migration maps will show, however, that the migrants who really came from a considerable distance are few in proportion to the population which absorbed them.

in getting in the harvest in the North of England, belong to this class.

Counties of Absorption and Dispersion.

Whilst migration may be said to be going on in every portion of the United Kingdom, there exist nevertheless vast and striking differences with reference to its extent and direction when we compare one part of the country with another. There are counties which retain nearly the whole of their native population, and even receive an accession from other counties; counties from which broad currents of emigration proceed, compensated in some measure by counter-currents of immigration; and counties which appear to be traversed by these migratory currents.

Of the natives of Lancashire, the Shetland Islands, of Kerry, and of eleven other Irish counties, less than 10 per cent. were enumerated outside the counties in which they were born; whilst over half the natives of Peebles and Kinross had established themselves beyond the boundaries of their native counties. These are the extremes, and between them all gradations will be found to exist in apparently inextricable confusion. We will attempt to bring something like order into this chaos.

There are counties which increase their population not merely by an excess of births over deaths, but also by the reception and absorption of migrants from other counties. Counties such as these we will call "counties of absorption," whilst the counties at whose expense they are fed and grow populous we will call "counties of dispersion."

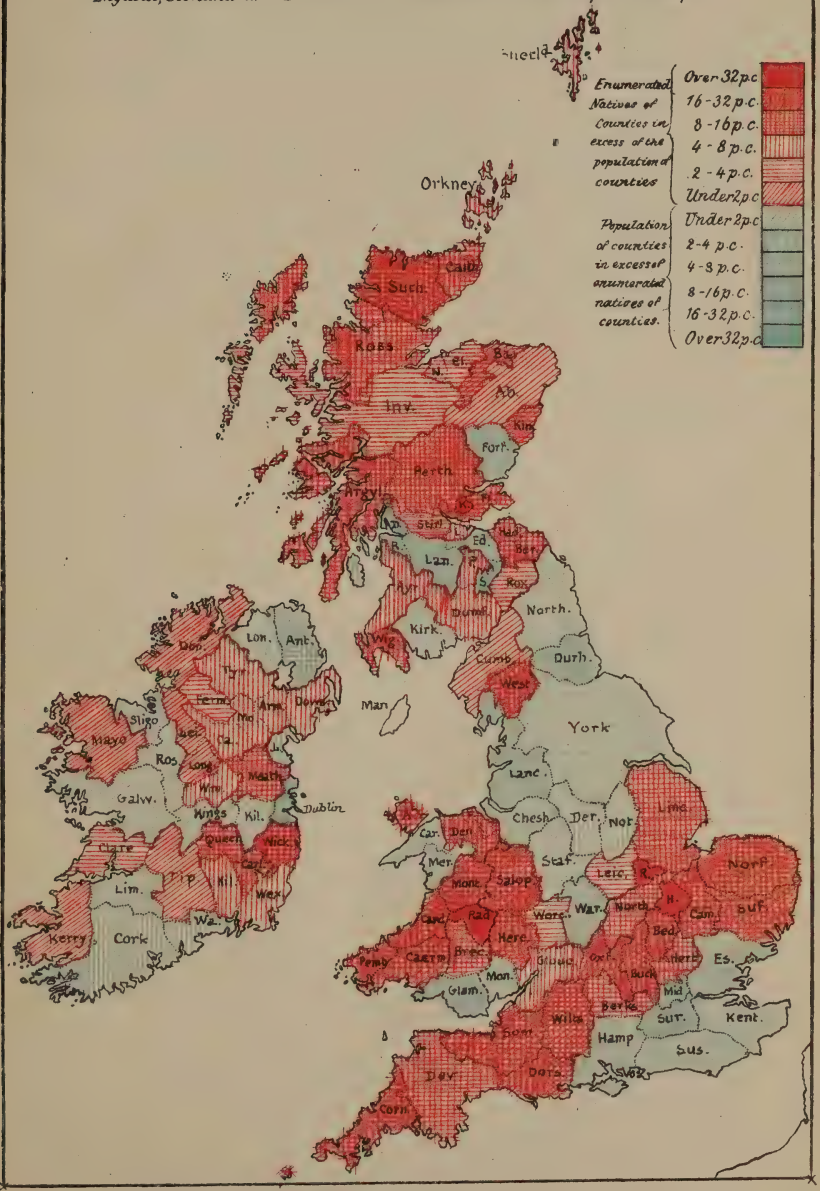
A county of absorption has a population more or less in excess of the number of its natives enumerated throughout the kingdom. In a county of dispersion, on the other hand, the population falls short of the number of natives enumerated throughout the kingdom. If the natives of each county now scattered throughout the kingdom could be made to return to the counties in which they were born, the population of the counties of absorption (tinted blue on Map 6) would dwindle away, whilst that of counties of dispersion (tinted red) would increase to a corresponding extent.

The natives of Surrey enumerated throughout England and Wales number 996,655, but Surrey has a population of 1,436,899. Consequently, even though all the natives of Surrey were to return to the county of their birth, it would still be necessary to retain within its limits 440,244 natives of other counties, equivalent to 30·7 per cent. of all inhabitants, in order to maintain its population at its present level. Surrey, therefore, is a county of absorption.

Radnorshire, on the other hand, is represented by 33,974 natives

ABSORPTION AND DISPERSION.

The Counties tinted **Blue** *absorb migrants from the Counties tinted* **Red.**
England, Scotland and Ireland to be looked at as three separate Maps.



dispersed throughout England and Wales, whilst its population only numbers 23,528 souls. The natives therefore are 43·7 per cent. in excess of the population of the county, and Radnorshire may fitly be described as a county of dispersion.*

The following tabular statement is intended to present the leading facts connected with the dispersion and absorption of migrants:—

COUNTIES OF ABSORPTION.†

Natives of Counties short of the Population of Counties, in per Cents.

‡†Surrey ..... 30·7	‡†Yorkshire ..... 6·9	†*Essex ..... 4·4
‡†Glamorgan ..... 26·7	‡†Cheshire ..... 5·5	†*Derby ..... 2·9
‡†Durham ..... 19·9	‡†Warwick ..... 5·5	† Nottingham .... 2·7
‡†Lancashire ..... 18·1	†*Sussex ..... 5·3	*Merioneth ..... 1·8
‡†Middlesex ..... 17·7	*Carnarvon..... 5·1	Northumberland..... 1·4
‡ Monmouth ..... 8·0	*Hampshire ..... 4·7	‡† Stafford ..... 0·3
‡†*Kent ..... 7·9		

‡†Selkirk..... 37·6	‡†Dumbarton..... 26·2	*Bute ..... 12·9
‡†Lanark..... 29·2	‡†Renfrew ..... 17·3	*Kirkcudbright .... 5·1
‡†Edinburgh 28 9	‡†Forfar ..... 15·5	

‡†Dublin..... 31·8	*Londonderry .... 3·3	Limerick ..... 0·7
‡†Antrim ..... 15·9	*Louth ..... 2·5	*Kildare ..... 0·6
Waterford ..... 3·6	‡†*King's..... 1·5	‡†*Galway ..... 0·2
‡†Cork ..... 3·4	†*Sligo ..... 0·9	*Roscommon .... 0·2

* Sir Brydges P. Henniker, the registrar-general, considers that those counties "in which the actual growth, as shown on enumeration, was in excess of the "natural growth," absorbed population from without "over and above their native "product." ("Census of England and Wales," iv, p. 51.) He describes London, Sussex, Essex, Leicester, Notts, Derby, Cheshire, Lancashire, Yorkshire, Glamorgan, and Carnarvon, as counties of absorption. We include, in addition to these, Monmouth, Warwick, Hampshire, Merioneth, Northumberland, and Stafford, but place Leicestershire among counties of dispersion. The actual growth of Leicestershire (1871-81) certainly exceeded the natural growth to the extent of 4,957 souls. This, however, is by no means a proof of absorption, for we find that the enumerated natives of Leicestershire were 332,902, whilst the population of the county only numbered 321,258. Leicestershire cannot therefore have absorbed migrants. As a matter of fact, 85,772 natives of Leicestershire were enumerated outside the county, whilst the population of Leicestershire only included 74,128 persons who were not natives of the county.

† Counties in which the agricultural class is above the average of the kingdom are marked *; counties whose population increases more rapidly (or, in the case of Ireland, decreases at a slower rate) than throughout each kingdom at large, are marked †; counties whose natives increase similarly, are marked ‡.

We observe once more that in compiling this table no notice could be taken of migration from kingdom to kingdom. Had we been able to trace the migrants from Northumberland into Berwick and Roxburgh, it is probable that that county would have taken its place among counties of dispersion. Our inability of tracing the natives of Irish counties in Great Britain affects even more seriously the relative position of many of the Irish counties, several of which, as units of the United Kingdom, would have to be described as "counties of dispersion," being counties of absorption only relatively to the rest of Ireland.

COUNTIES OF DISPERSION.*

Natives of Counties in excess of the Population of Counties, in per Cents.

*Radnor	43·7	*Cardigan	23·3	*Lincoln	14·3
*Hunts	33·5	*Dorset	22·9	*Devon	13·9
*Rutland	33·5	*Pembroke	22·2	*Herts	11·3
*Wilts	27·4	*Hereford	21·4	*Flint	9·8
*Salop	26·4	*Westmoreland	21·2	*Northampton	9·5
*Bucks	24·8	*Anglesey	20·1	*Denbigh	8·2
*Norfolk	24·8	*Carmarthen	19·5	*Berks	8·1
*Suffolk	24·8	*Somerset	17·3	*Gloucester	5·9
*Montgomery	24·5	*Cornwall	16·9	*Worcester	3·6
*Oxford	24·1	*Bedford	16·4	†*Leicester	3·6
*Cambridge	23·4	*Brecknock	14·6	*Cumberland	1·7
*Kinross	26·1	*Berwick	13·9	‡ Linlithgow	4·8
*Banff	22·8	*Fife	6·8	†*Peebles	4·2
*Kincardine	20·2	*Wigtown	9·7	‡† Stirling	4·0
*Sutherland	19·5	*Shetland	7·4	*Inverness	3·9
*Ross	15·5	Ayr	7·0	*Elgin	2·6
*Haddington	15·4	*Orkney	6·9	*Nairn	2·6
*Caithness	15·1	*Dumfries	6·2	*Roxburgh	2·2
*Argyle	14·4	‡Clackmannan	4·9	‡ *Aberdeen	1·1
*Perth	14·2				
*Wicklow	25·3	‡Down	5·6	*Donegal	1·9
*Carlow	13·5	*Tyrone	5·1	*Tipperary	1·9
*Meath	13·1	*Cavan	5·0	*Leitrim	1·9
*Queen's	9·2	*Kilkenny	4·5	*Longford	1·6
*Wexford	6·9	Armagh	4·1	‡†*Kerry	0·2
*Westmeath	6·7	*Fermanagh	2·6	‡†*Mayo	0·1
*Monaghan	6·2	‡†*Clare	2·1		

The "counties of absorption" are the chief seats of commerce and industry. The agricultural class within most of them is less numerously represented than in the country at large. The few agricultural counties included under this class, such as Kent, Sussex, Derby, and Essex, are not without their industrial centres.

The population of these counties increases at the same time at a rate exceeding that of the general increase. In Ireland these features are obscured owing to the vast amount of migration to Great Britain.

The vigour with which the process of absorption is going on in the metropolitan counties, in Glamorgan, Durham, and Lancashire, in certain Scotch counties, and in Dublin and Antrim, is deserving attention, no less than the feebleness to be observed elsewhere.

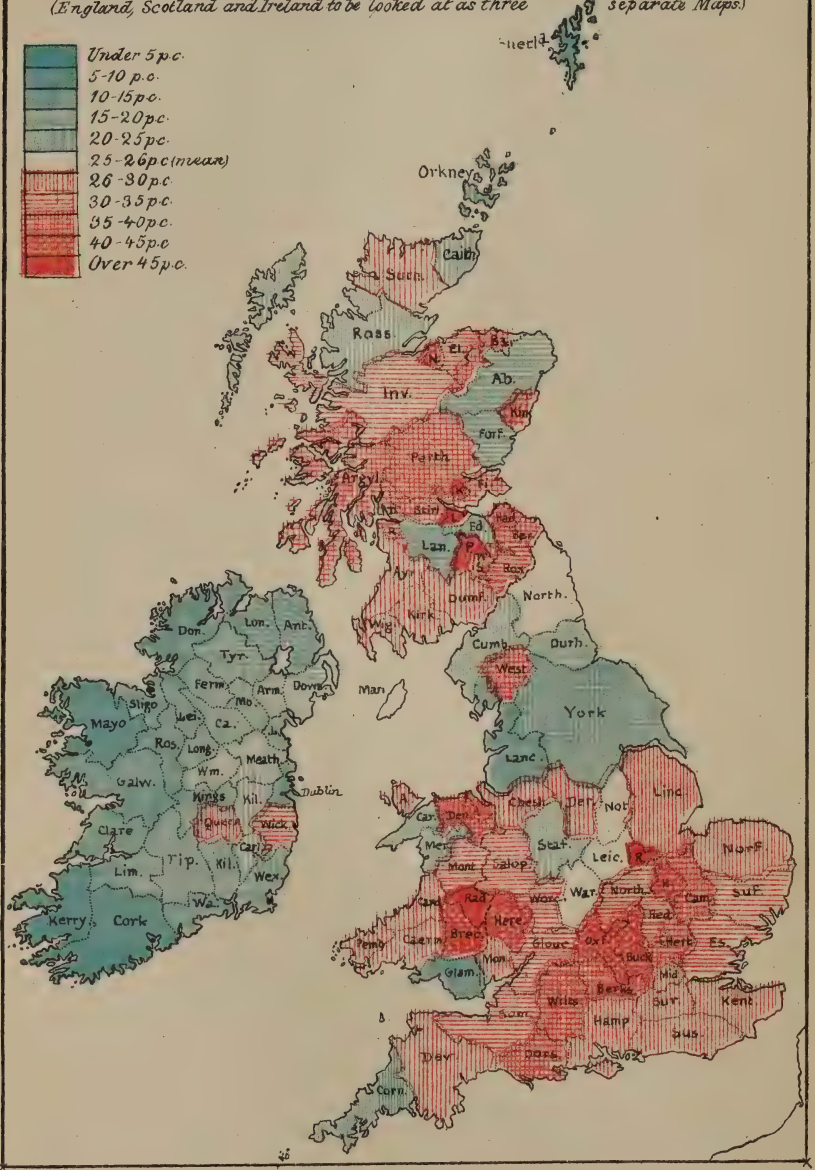
Very different are the features presented by the counties of dispersion, from which the counties of absorption are being fed.

* See note (†) on preceding page.

MIGRATION-MAP,

exhibiting the Proportion of Natives of each County enumerated (in 1881) outside the County of their Birth

(England, Scotland and Ireland to be looked at as three separate Maps.)



They are nearly all of them agricultural, and their population increases but slowly or is retrogressive. There are a few exceptions, but none in the case of counties from which the process of dispersion is going on most vigorously.

Counter-Currents of Migration.

We have already had occasion to refer to the fact that side by side with each main stream or current of migrants there runs a counter-current, which more or less compensates for the losses sustained by emigration. This counter-current is strong in some cases, weak in others, and literally compensatory in a few instances. Its universal existence is proved by the fact that there is no county in England in which the native county element exceeds 90 per cent. and none in the United Kingdom in which it exceeds 97 per cent.

This counter-current is not by any means composed of migrants who return homeward disappointed in their hopes or in the possession of a competency, for ex-migrants of this class are included in the native county element, and no data for even approximately determining their number are in our possession. It includes, no doubt, many children of migrants, who have gone to the counties in which their parents were born, but the bulk of these migrants undoubtedly consists of persons whom business interests take away from their homes. But although we readily understand why the manufacturers of Yorkshire and Lancashire send persons to London to look after their interests, whilst the merchants of London despatch agents and buyers to the manufacturing districts, the grounds, which lead to an "exchange" of natives between counties so far removed from each other as are, for instance, Dorsetshire and Westmoreland, are not quite so easily understood. Yet fifty-five Dorsetshiremen were enumerated in Westmoreland, and twenty-six natives of Westmoreland in Dorset. Even the miniature county of Rutland has its representatives in every county of England and Wales, with the sole exception of Carnarvon and Radnor, and natives of all these counties were likewise enumerated in Rutland.

In the case of London, both the main and the counter-currents flow with considerable vigour. In 1881 584,700 natives of London were enumerated in other parts of England and Wales, whilst the migrants from the country who resided in London numbered 1,164,071. The main currents of migration flow in every instance, with one single exception, Londonward, the exception being extra-metropolitan Surrey. The numbers for each group of counties are furnished in the following table :—

Counties, &c.	Natives of the Country Enumerated in London.	Natives of London Enumerated in the Country.	Proportion of Migrants from London to every 100 Immigrants.
Extra-metropolitan Middlesex	97,736	94,848	97
„ Surrey	63,284	66,476	105
„ Kent	95,505	54,638	57
Essex	92,553	83,326	90
Herts	35,793	14,845	41
Metropolitan group	384,871	314,133	82
Inner belt of counties	380,427	113,572	29
South-western group	137,226	24,972	18
Outer belt	115,629	45,974	40
Midland group	31,794	17,623	56
North-western group	32,506	28,686	88
North-eastern „	48,071	31,796	66
Wales	23,547	7,944	34
	1,164,071	584,700	50

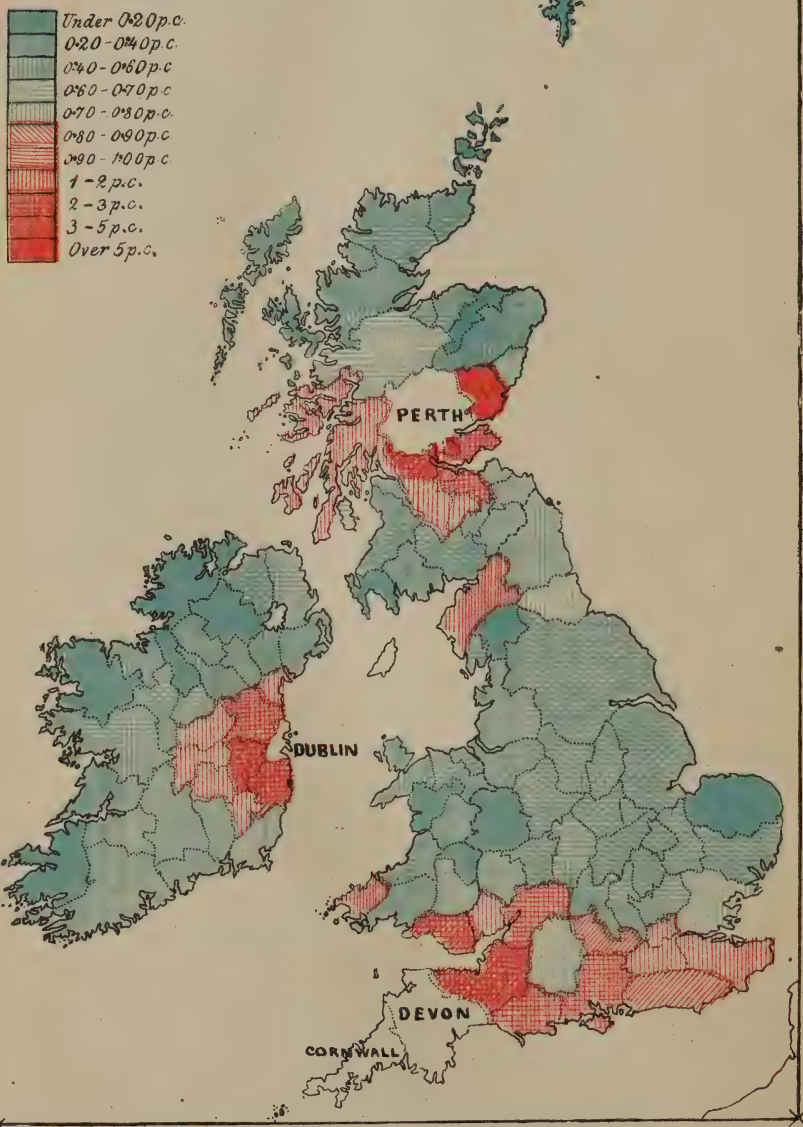
We thus see that for every hundred strangers who settle in London, fifty natives of London leave the metropolis, and that over one-half of these migrants are carried no further by the counter-currents than one of the five metropolitan counties. Many, if not most of them, have merely removed to what are actually suburbs, and can hardly be said to have left the metropolis. Relatively strong are the counter-currents which set towards the manufacturing districts, and more especially towards Lancashire and Yorkshire. This proves once more that the movements of migrants are governed in most instances by business considerations.*

For our second illustration I propose to go to Scotland, to the county of Peebles, where both emigration and immigration, outflow and inflow, are far above the average. In 1881 14,272 natives of Peebles were enumerated in Scotland, of whom only 6,709 resided in the county of their birth, and 7,563 in other parts of Scotland. But as Peebles had a population of 13,688, no fewer than 6,979 persons enumerated within its borders, were found to be natives of other parts of the world, and of these 6,370 were natives of Scotland. Peebles is therefore classed by us as a "county of "dispersion," and, like Perthshire, it is at the same time a "county of passage;" for whilst the migrants who cross its borders for Edinburgh, Linlithgow, Selkirk, Kirkcudbright, Renfrew, and Dumbarton, outnumber the immigrants from these counties, the immigration from the rest of Scotland is in excess of the emigration. A kind of balance-sheet of these opposing currents is presented in the following table:—

* The details for each county are given in the table, p. 210.

DISPERSION OF MIGRANTS
from
DEVON-CORNWALL, PERTHSHIRE AND DUBLIN.

The Tints indicate the proportion of Migrants to the Population of the Counties in which they were enumerated.
(England, Scotland & Ireland to be looked as separate Maps)



	Natives of other parts of Scotland Enumerated in Selkirk.	Natives of Selkirk Enumerated in other parts of Scotland.	Proportion of Migrants from Selkirk to every 100 Natives of other parts.
Selkirk	431	672	156
Edinburgh	1,504	3,713	247
Linlithgow	104	109	105
Kirkcudbright	27	62	229
Renfrew	58	86	148
Dumbarton	16	50	312
Roxburgh	564	250	44
Dumfries	359	180	50
Wigtown	13	11	85
Berwick	214	88	41
Haddington	195	153	78
Lanark	1,786	1,544	86
Ayr	103	80	78
Stirling	108	90	83
Argyll and Bute	52	38	73
East Midland division	521	337	65
North-east division	175	56	32
Ross and Inverness	76	22	29
Northern division	52	22	42
	6,370	7,563	119

The Dispersion of Migrants Illustrated.

The county of Dublin, which we select as our first illustration of dispersion, has a population of 418,910 souls; and as only 285,528 natives of it were enumerated in 1881 as residing in Ireland, it has been classed by us among "counties of absorption." Of the enumerated natives of Dublin, 259,246 resided within the county in which they were born, 26,283 in other parts of Ireland. Of the migrants as many as 7,195, or 27·39 per cent., were enumerated in the border counties of Wicklow, Kildare, and Meath; 3,954, or 15·5 per cent., were found to reside in an outer belt of counties, including, Louth, Westmeath, King's, Queen's, and Carlow; 6,112, or 23·25 per cent., had settled in the counties of Wexford, Kilkenny, Tipperary, Waterford, Cork, and Longford; and 9,022, or 34·30 per cent., had scattered themselves over the whole remainder of Ireland. But as the number of migrants which any county is able to absorb depends very largely upon population, just as a large sponge will absorb more water than a small one, we obtain a more correct insight into the extent of migration if we compare the number of migrants with the total population of the counties in which they settle down. We then find that the natives of Dublin enumerated in the three border counties amounted to 3·8 per cent. of the total population of these counties, whilst in the outer belt they only mustered 1·15 per

cent., in the third group of counties 0·56 per cent., and in the remainder of Ireland 0·29 per cent.

And when we examine Map 9, which illustrates this dispersion of the natives of Dublin, we are at once struck by the decrease of migrants as we travel away from the centre of dispersion, the only exception, and that not a very striking one, being presented by the county of Antrim. The following table exhibits the

Dispersion of the Migrants from Dublin County.

	Migrants.	Per Cent. of Migrants.	Per Cent. of Population of Counties.
Wicklow	2,849	10·84	4·04
Kildare	2,452	9·33	3·23
Meath	1,894	7·22	2·16
Border counties	7,195	27·39	3·08
Louth	906	3·46	1·17
Westmeath	798	3·04	1·11
King's	874	3·33	1·20
Queen's	863	3·28	1·18
Carlow	511	1·94	1·10
Second belt	3,954	15·05	1·15
Wexford	969	3·69	0·78
Kilkenny	550	2·10	0·55
Tipperary	1,082	4·12	0·54
Waterford	603	2·29	0·53
Cork	2,567	9·76	0·52
Longford	341	1·30	0·56
Third belt	6,112	23·26	0·56
Rest of Ireland	9,022	34·30	0·29
Total	26,283	100·00	0·55

We will next consider the migration from the counties of Devonshire and Cornwall. In 1881 240,930 natives of these counties were enumerated in other parts of England and Wales, whilst the number of strangers settled in Devon-Cornwall was only 100,564. Devon-Cornwall is thus a region from which a broad stream of migration flows to other parts of England and Wales. As Somerset and Dorset, and indeed a broad belt of country stretching north-eastward as far as the German Ocean, send forth a larger number of migrants than they receive in return, whilst South Wales and south-eastern England, with the Metropolis, are the great absorbents of migrants most readily within reach of natives of Devon-Cornwall, it might be presumed

MIGRATION INTO
LONDON, GLASGOW AND DUBLIN

The Tints indicate the Proportion of Migrants from each County who were enumerated in 1881 in London, Glasgow, and Dublin County.

Under 3 p.c.
3–5 p.c.
5–7 p.c.
7–10 p.c.
10–15 p.c.
15–20 p.c.
20–25 p.c.
25–30 p.c.
30–35 p.c.
35–40 p.c.
40–45 p.c.
45–50 p.c.
Over 50 p.c.

Shetld.

England, Scotland and Ireland to be looked at as three separate maps.

Orkney
Caith.
Suth.
Ross
N.
El.
Bf.
Inv.
Ab.
Kin.
Fif.
Perth
Argy.
K.
Stirl.
Ed.
Had.
Ber.
Lan.
P.
S.
Rox.
Ayr
Dumf.
North.
Wig.
Kirk.
Cumb.
Durh.
West
Man.
York
Don.
Lon.
Ant.
Tyr.
Ferm.
Arm.
Down
Mo.
Sligo
Lei.
Ca.
Mayo
Ros.
Long.
Wm.
Meath
Galw.
Kings.
Kil.
Dublin
Queen.
Wick.
Clare
Carl.
Tip.
Kil.
Lim.
Wex.
Wa.
Kerry
Cork
Lanc.
Linc.
Chesh.
Der.
Not.
Car.
Den.
Mer.
Staf.
Leic.
R.
Norf.
Mont.
Salop.
H.
Cam.
Suf.
Card.
Rad.
Worc.
War.
North.
Bed.
Here.
Glouc.
Oxf.
Herts.
Es.
Pemb.
Caern.
Brec.
Buck.
Mon.
Mid.
Glam.
Berks.
Wilts
Sur.
Kent.
Som.
Hamp.
Sus.
Dev.
Dors.
Wor.
Corn.

35

that the bulk of the latter would have proceeded thither, to the utter neglect of the border counties. Such, however, is not the case. Somerset, proportionately to its population, has absorbed more migrants from Devon-Cornwall than any other county in England; and if Glamorgan ranks above Dorset in that respect, this is due quite as much to the proximity of the Welsh county, and the facility with which it can be reached, as to the attraction which it exercises as a field for remunerative labour. Map 9 shows very clearly by its tints that the great currents which carry the migrants of Devon-Cornwall along with them set across the Bristol Channel to South Wales, up the valley of the Severn in the direction of Warwickshire, and through Dorset, Hampshire, and Surrey to London. The more distant from the fountain head which feeds them, the less swiftly do these currents flow; and whilst they sweep along with them many of the natives of the counties through which they pass, they deposit, in their progress, many of the migrants which had joined them at their origin. In this way 18,687 natives of Devon-Cornwall were found in 1881 to have been "deposited" in Somerset, whilst 33,728 natives of the latter county were enumerated in Gloucester. Similarly, the gaps created in the population of Dorsetshire by a migration of 19,476 natives of that county into Hampshire had partly been filled up by an immigration of 4,355 natives of Devon-Cornwall. And thus it happens that even in the case of "counties "of dispersion," which have population to spare for other counties, there takes place an inflow of migrants across the borders, and this inflow is most considerable across that border which lies furthest away from the great centres of absorption.

On examining Map 9 it will be found that proportionately to the population migrants from Devon-Cornwall are more numerous in certain parts of the north of England than in the centre of the kingdom. It is clear that the "facilities" enjoyed by maritime counties for cheap transit by sea have something to do with this. It is clear likewise that among the natives of Devon-Cornwall enumerated in the ports of north England there must be many sailors. We look, however, to the decay of the mining industry in Cornwall as to the principal cause of this comparative preponderance. In 1871 there were 25,643 miners in Devon-Cornwall, in 1881 only 14,976; and many who lost their employment at home, appear to have gone to the mining districts of the north in search of work.

The following is a tabular statement of the

Dispersion of the Migrants from Devon and Cornwall.

	Migrants.	Per Cent. of Migrants.	Per Cent. of Population of Counties.
Glamorgan	17,145	7·12	3·35
Somerset	18,697	7·76	3·98
Dorset	4,355	1·81	2·28
Border counties	40,197	16·69	3·43
Gloucester	12,390	5·14	2·16
Monmouth	3,256	1·36	1·54
Lower Severn	15,646	6·50	2·00
Hampshire	12,125	5·03	2·04
Surrey (extra-metropolitan)	6,380	2·65	1·45
London	75,490	31·33	1·98
Middlesex (extra-metropolitan)	5,790	2·40	1·23
Kent (extra-metropolitan)	7,414	3·08	1·04
Sussex	4,391	1·82	0·89
South-east England	111,590	46·31	1·71
Lancashire	17,856	7·40	0·51
Cumberland	2,997	1·24	1·20
Westmoreland	115	0·05	0·18
Yorkshire	10,559	4·39	0·36
Durham	6,302	2·62	0·73
Northumberland	2,516	1·04	0·55
North England	40,345	16·74	0·51
Rest of England and Wales	33,152	13·76	0·34
Total	240,930	100·00	0·96

For our third illustration we go to Perthshire in Scotland. That county has a population of 130,282 souls, and as its natives, as far as they were enumerated in Scotland, numbered 148,835 souls, it is classed by us as a "county of dispersion." But whilst Devon-Cornwall may justly be said to feed all the counties of England and Wales, Perthshire only feeds a portion of those of Scotland, and is itself being fed by others. In sixteen counties the natives of Perthshire are more numerous than the natives of these counties enumerated in Perthshire. Within this group of counties there resided in 1881 49,525 natives of Perthshire, whilst the compensating counter-currents of migration had brought into Perthshire only 22,559 natives of the whole of them. Perthshire had thus sustained a loss of 26,966 souls.

The remaining Highland counties, on the other hand, had sent 6,007 of their natives into Perthshire, only receiving 3,253 of that county in return. The corresponding figures for the remaining

Lowland counties were 1,194 and 1,070. From these two sources Perthshire had consequently obtained an accession of 2,878 inhabitants, reducing its absolute loss to 24,088 souls.

It is clear from this that whilst currents of migration set into Perthshire from the north, much stronger currents flow out of it into its eastern and southern border counties. The immigration from certain Lowland counties constitutes a special feature. The proportions for each county are as follows:—

		Per Cent. of all Migrants from Perthshire.	Per Cent. of Population of Counties.
Counties fed by Perthshire.	Kinross	1·84	14·34
	Clackmannan	3·75	8·86
	Forfar	30·25	6·40
	Stirling	8·56	4·55
	Fife	7·59	2·51
	Edinburgh	13·84	2·01
	Dumbarton	2·12	1·54
	Lanark	19·47	1·17
	Peebles	0·26	1·06
	Linlithgow	0·73	0·94
	Haddington	0·46	0·68
	Bute	0·19	0·62
	Selkirk	0·28	0·60
	Renfrew	2·35	0·59
	Roxburgh	0·46	0·50
	Berwick	0·30	0·47
Highland counties which feed Perthshire.	Argyle	1·57	1·10
	Kincardine	0·43	0·69
	Inverness	1·02	0·67
	Nairn	0·08	0·53
	Elgin	0·40	0·50
	Sutherland	0·12	0·31
	Aberdeen	1·36	0·29
	Ross	0·38	0·27
	Caithness	0·13	0·20
	Banff	0·16	0·15
	Shetland	0·03	0·06
	Orkney	0·03	0·06
Lowland counties which feed Perthshire.	Dumfries	0·47	0·35
	Ayr	1·09	0·29
	Kirkcudbright	0·20	0·27
	Wigtown	0·12	0·18

The Absorption of Migrants Illustrated.

The process of absorption is the inverse of that of dispersion, and presents and resembles the latter inasmuch as growing towns or counties first absorb the migrants from their environs or borders before they call upon the resources in men of the more distant parts of the country. The county of Warwickshire, which we select on account of its central position as an illustration of this

process, has a population of 737,339 souls; and as the number of natives of Warwickshire enumerated throughout England and Wales only amounts to 696,710, it is classed by us as a "county of absorp- "tion." As a matter of fact, however, it acts as a feeder to two important groups of counties, one of which includes the leading manufacturing districts in the North of England, whilst the other embraces the metropolitan counties, with Essex, Sussex, and Hampshire. In 1881 37,218 natives of Warwickshire were enumerated in the first of these groups, and 37,308 in the second, whilst only 21,859 natives of the first and 21,132 of the second were enumerated in Warwickshire. The county in its exchange of population with these two groups had thus sustained a loss of 31,535. This loss, however, was more than made good by an excessive immigration from the remainder of England and Wales. The border counties alone sent 116,668 migrants, whilst receiving only 87,457 in return. In the following tabular statement we have distinguished the counties which feed Warwickshire from those which are fed by it:—

Natives of	Number.	Percentage of Population of Warwick.	Percentage of Natives of Groups of Counties.	Percentage of Migrants from Groups of Counties.
Warwickshire	518,436	70·31	74·41	—
Counties which feed Warwickshire				
Border counties[1]	116,668	15·82	4·12	14·47
Counties on Welsh border[2]	13,974	1·90	2·13	6·01
Wales	3,989	0·54	0·28	1·20
South-western England[3]	8,809	1·20	0·40	1·30
South-eastern Midland[4]	6,480	0·89	0·67	1·71
Eastern counties[5]	5,170	0·71	0·29	0·95
Northern counties[6]	1,091	0·15	0·17	0·59
Counties fed by Warwickshire—				
Northern manufacturing districts[7]	21,859	2·96	0·29	1·97
Metropolitan group[8]	21,132	2·86	0·36	1·33
Scotland	2,908	0·39	—	—
Ireland	9,628	1·31	—	—
Other parts	7,095[9]	0·96	—	—
Total	737,339	100·00	—	—

[1] Gloucester, Oxford, Northampton, Leicester, Stafford, and Worcester.
[2] Shropshire, Hereford, and Monmouth.
[3] Wilts, Somerset, Dorset, Devon, Cornwall.
[4] Rutland, Hunts, Beds, Herts, Bucks, Berks.
[5] Lincoln, Cambridge, Norfolk, Suffolk.
[6] Cumberland, Westmoreland, Northumberland.
[7] Cheshire, Lancashire, Derby, Notts, York, Durham.
[8] Middlesex, Essex, Surrey, Kent, Sussex, Hants.
[9] Inclusive of 1,907 natives of England whose place of birth is not known.

Further illustrations of "absorption" will be given in connection with the large towns.

Migration and the Natives of Towns.

The census returns only furnish the number and distribution of the natives of London and of seven Scotch towns, viz., Aberdeen, Dundee, Edinburgh-Leith, Glasgow, Greenock, Paisley, and Perth. The results have been embodied by us in the table below.

Composition of the Population of London and of Seven Scotch Towns.

Natives of	London.		Aberdeen.		Dundee.		Edinburgh-Leith.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
Town	2,401,955	62·9	59,485	56·5	77,201	55·1	146,416	50·8
Rest of county	394,871*	10·3	23,333	22·2	15,353	10·9	14,423	5·0
Border counties	—	—	11,543	11·0	22,655	16·1	44,067‡	15·3
Rest of kingdom	777,699	20·4	6,509	6·2	9,627	6·9	53,703	18·5
England and Wales	49,554†	1·3	2,507	2·4	2,865	2·0	14,193	4·9
Ireland	80,778	2·1	715	0·7	11,443	8·2	8,875	3·1
Other parts	111,626	2·9	1,097	1·0	1,095	0·8	6,165	2·5
Total population, 1881	3,816,483	100·0	105,189	100·0	140,239	100·0	287,842	100·0
Proportion of the natives of the town enumerated in the town in which born, in per cent.	80·4		74·5		80·1		75·3	
Females to 100 males among all natives (and among native town element)	112 (109)		116 (115)		113 (117)		113 (110)	

Natives of	Glasgow (M.B.).		Greenock (M.B.).		Paisley.		Perth.		Seven Scotch Towns.	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
Town	262,146	51·3	33,309	50·0	34,362	61·8	13,897	48·0	626,816	52·4
Rest of county	§51,607	10·1	3,439	5·1	3,969	7·1	6,430	22·5	118,554	9·9
Border counties	‖68,518	13·3	10,515	15·8	8,196	14·8	3,748	12·6	169,242	14·2
Rest of kingdom	41,327	8·1	5,758	8·6	3,016	5·4	2,987	10·3	122,927	10·3
England and Wales	16,026	3·1	2,097	3·1	850	1·5	849	2·9	39,387	3·3
Ireland	67,109	13·1	10,717	16·1	4,994	9·0	850	2·9	104,703	8·7
Other parts	4,682	0·9	869	1·3	251	0·4	219	0·8	14,378	1·2
Total population, 1881	511,415	100·0	66,704	100·0	55,638	100·0	28,980	100·0	1,196,007	100·0
Proportion of the natives of the town enumerated in the town in which born, in per cent.	70·1		71·9		63·5		52·2		72·1	
Females to 100 males among all natives (and among native town element)	108 (108)		114 (102)		112 (111)		115 (114)		111 (110)	

* Including extra-metropolitan Middlesex, Surrey and Kent, Essex and Hertford.
† Natives of Scotland. ‡ Including Fife.
§ Including Lanark and Renfrew. ‖ Including Argyll and Bute.

At the first glance it would almost appear as if the natives of towns were more migratory in their habits than the natives of the country, for we find that as many as 27·9 per cent. of the natives of the Scotch towns were enumerated outside the town in which they were born, whilst the proportion for the natives of counties averages only 25·6 per cent. But it is evident that towns cannot be compared with entire counties, but must be compared with rural parishes, and were we in possession of information enabling us to do this, we should undoubtedly find that the natives of towns are more sedentary in their habits than are the natives of the country.

As to female emigration we find that females are more migratory than males, for among the natives of the seven Scotch towns there are 111 females to every 100 males, whilst among the native town element there are only 110. For London these figures are 112 and 109.

Female Migration.

Woman is a greater migrant than man. This may surprise those who associate women with domestic life, but the figures of the census clearly prove it. Nor do women migrate merely from the rural districts into the towns in search of domestic service, for they migrate quite as frequently into certain manufacturing districts, and the workshop is a formidable rival of the kitchen and scullery.

Amongst the natives of England and Wales enumerated throughout the United Kingdom in 1881 there were 106 females to every 100 males, amongst the natives of Scotland 108, and amongst those of Ireland 103. The large preponderance of females among the Scotch distinctly points to an extensive emigration to foreign countries; and those who have experienced the ubiquity of the Scot in the military and civil services of his country, in the mercantile marine, in commercial and all other pursuits, will not be surprised at this fact. On the other hand the low proportion of females among the Irish does not by any means prove that emigration is not taking place on a large scale, for we know the reverse to be the case. It proves, however, that females migrate from Ireland much more frequently than they do from Scotland or England. Whilst emigrants from England or Scotland depart in most instances without "incumbrances," it appears to be a common practice for entire families to leave Ireland in search of new homes. At all events the elements which make up families will be found to exist amongst Irish emigrants, and this fact, amongst others, explains their slow assimilation with the peoples among whom they settle.

The following tabular statement exhibits the influence which migration within the limits of the United Kingdom exercises upon the proportion between the sexes :—

	Number of Females to every 100 Males among Natives of			
	England and Wales.	Scotland.	Ireland.	United Kingdom.
Residing in county where born	104	108	104	105
Residing beyond county where born, but not beyond limits of kingdom	112	114	116	112
Residing in other parts of the United Kingdom	81	91	92	90

These proportions show very clearly that females are more migratory than males within the kingdom of their birth, but that males more frequently venture beyond. In other words more females than males leave the county in which they were born in order to seek employment in some other county of the same kingdom, but more males leave the kingdom of their birth for one of the sister kingdoms.

And whilst the migration of females from county to county is proceeding more actively than that of the males, the female migration within the limits of each county is going on at a corresponding if not at a higher rate. In nearly all the towns included in our table, the proportion of females among the native county element is higher than it is in the rural parts of the counties, which proves that a migration of females has taken place into the towns in excess of that of males. Most of these migrants came in search of domestic service, but others, and in several instances no doubt a majority, came also in the hope of finding employment in shops and factories. The only towns which have proved more attractive to males than to females are West Ham, St. Helen's, West Bromwich, Middlesbrough, Airdrie, Hamilton, Greenock, Hawick, and Londonderry. In all these towns male labour is more sought after than female labour. They are in fact great centres of iron and coal mining, of machine building, and of other branches of industry chiefly carried on by men.

When we turn from towns to counties we find the same causes in operation. In most of the counties the proportion of females in the native county element is smaller than it is among the natives of each county enumerated throughout the kingdom. This shows that the migration of females into other counties has been in excess of that of the males. The excess has been greatest in such counties as Rutland, Berkshire, Huntingdonshire, and Shropshire,

Argyll, Linlithgow, and Stirling, Wexford, and Wicklow, in which female labour is not much in demand, or through which strong currents of female migration flow in the direction of the great towns and manufacturing districts.

The counties on the other hand which have retained a larger proportion of their county-born females than of males are either those which in their textile and similar industries afford employment to numerons females, or those which, owing to geographical position, are more or less remote from female labour markets, or, what brings about the same result, hold out inducements to male migrants in search of work in neighbouring iron works or coal mines.

To the first class of counties belong Bedfordshire, Nottinghamshire, Leicestershire, Lancashire, and Yorkshire in England; Fife and Forfar in Scotland; Antrim, Dublin, and Cork in Ireland. All these are counties in which female labour is much sought, and where native-born females have consequently little inducement to go elsewhere in search of employment.

The counties which retain a larger proportion of females than males, because the latter are drawn away by promise of employment in quarries, mines, and iron works, are Cardigan, Pembroke, Carmarthen, and Anglesey in Wales; Kinross, Wigtown, Banff, Clackmannan, Kirkcudbright, Perth, Ross, Selkirk, and Roxburgh in Scotland.

The Laws of Migration.

It does not admit of doubt that the call for labour in our centres of industry and commerce is the prime cause of those currents of migration which it is the object of this paper to trace. If, therefore, we speak perhaps somewhat presumptuously of "laws of "migration," we can only refer to the mode in which the deficiency of hands in one part of the country is supplied from other parts where population is redundant.

1. We have already proved that the great body of our migrants only proceed a short distance, and that there takes place consequently a universal shifting or displacement of the population, which produces "currents of migration" setting in the direction of the great centres of commerce and industry which absorb the migrants.

In forming an estimate of this displacement we must take into account the number of natives of each county which furnishes the migrants, as also the population of the towns or districts which absorb them.

2. It is the natural outcome of this movement of migration, limited in range, but universal throughout the country, that the process of absorption would go on in the following manner:—

The inhabitants of the country immediately surrounding a town of rapid growth, flock into it; the gaps thus left in the rural population are filled up by migrants from more remote districts, until the attractive force of one of our rapidly growing cities makes its influence felt, step by step, to the most remote corner of the kingdom. Migrants enumerated in a certain centre of absorption will consequently grow less with the distance proportionately to the native population which furnishes them, and a map exhibiting by tints the recruiting process of any town ought clearly to demonstrate this fact. That this is actually the case will be found by referring to maps 3, 4, 8, and 9. These maps show at the same time that facilities of communication may frequently countervail the disadvantages of distance.

3. The process of dispersion is the inverse of that of absorption, and exhibits similar features.

4. Each main current of migration produces a compensating counter-current.

5. Migrants proceeding long distances generally go by preference to one of the great centres of commerce or industry.

6. The natives of towns are less migratory than those of the rural parts of the country.

7. Females are more migratory that males.

These propositions have either been considered, and supported by facts, in the preceding portion of this paper, or they will be considered in connection with the towns.

The Laws of Migration and the Towns.

1. Having thus shown that the bulk of our migrants only move a comparatively short distance from the place which gave them birth, and having suggested a law in accordance with which the displacement of our population resulting from migration is going on throughout the country, we proceed to test the correctness of our conclusions with special reference to the towns. That our great towns and centres of industry are the goal to which the migrants from the rural districts most frequently wend their steps, becomes at once evident when we examine into the composition of our town populations according to birthplaces. The mere fact that most towns increase much more rapidly in population than the rural districts does not suffice to prove this. It is quite true that the town population of England and Wales between 1871 and 1881 increased to the extent of 19·6 per cent., whilst the rural population exhibited an increase of only 7·4 per cent., and that in Scotland the increase of the towns amounted to 18·2 per cent., and that of the remainder of the kingdom to 1·4 per cent. only. But this comparatively large increase might have been brought about

by a natural increment, that is, by an excess of births over deaths. To show this we need merely refer to the fact that there are nine counties in Great Britain whose natives between 1871 and 1881 increased more than 18 per cent. These counties, with their increase, were Selkirk (42·1 per cent.), Durham (32·2 per cent.), Lanark (25·3 per cent.), Lancashire (21·5 per cent.), Monmouth (20·9 per cent.), Glamorgan (20·2 per cent.), Stafford (19·2 per cent.), Warwick (18·7 per cent.), and Middlesex (18·3 per cent.).*

It is only when we inquire into the composition of the population of the towns according to birthplaces, that we obtain an idea of its mixed character. The "native county element" will be found to preponderate in most cases, but there is always present a strong border element, and a large number of natives from more remote parts of the country. If the process by which the towns recruit their population is really such as we have suggested, *Sub.* 2, then the native county element should be stronger in the town than it is in the rural parts of the county in which the town is situate; and the border element should be stronger in the rural parts than in the town. These features, however, we can only expect to find fully developed in cases where the population of the town is not altogether out of proportion to that of the rural parts of the county, and where the town lies in the centre of the county to which it belongs politically, for towns lying near a boundary between two counties naturally attract migrants from both. Still, out of sixty-seven towns, with a total population of 11,610,687 souls, with reference to which we have information as to the birthplaces of the inhabitants, as many as twenty-six, with 2,795,913 inhabitants, follow this rule, viz., the native county element is stronger within them than in the rural parts of the county in which they lie, and the border element, that is, natives of border counties enumerated in the towns, is weaker than in the surrounding rural parts.

These towns are Blackburn, Bolton, Bury, Preston, Rochdale, and St. Helens in Lancashire; Bradford, Halifax, Huddersfield, and Leeds in Yorkshire; Bristol, Southampton, Walsall, Newcastle with Gateshead, Sunderland; Glasgow, Greenock, Paisley, Kilmarnock, Dunfermline, Arbroath, Hamilton, Airdrie, and Hawick in Scotland; Belfast and Drogheda in Ireland.†

In illustration of this class of towns we select Paisley. The

* We need hardly observe that the increase of the natives of counties is largely influenced by migration, for the children of migrants count towards the natives of those counties in which they are born.

† Additional towns of the same type, according to the census for 1871, are Macclesfield, Exeter, Durham, Canterbury, Maidstone, Coventry, Dudley, Worcester, York.

contingent which each county of Scotland has contributed towards the population of that manufacturing town of Renfrewshire differs of course very considerably according to the population of each county; but when we compute the proportion which the natives of each county enumerated in Paisley bear to the total number of natives enumerated throughout Scotland, and to the migrants from each county, we soon perceive that the counties of Scotland group themselves in a certain order. The bulk of the inhabitants consists naturally of natives of Paisley itself and of the remainder of Renfrewshire, but the counties forming a "border zone" have furnished, proportionately to the number of their natives, a considerable contingent, which depends primarily upon distance and facility of access, but is also influenced by the extent to which migration is going on from each county.

Natives of	Number.	Percentage of Population of Paisley.	Percentage of Natives Enumerated in Scotland.	Percentage of Migrants from each County.
Paisley	34,362	61·76	16·51	—
Rest of Renfrew	3,989	7·16	3·01	—
Renfrew	38,351	68·92	2·06	—
Ayr	2,834	5·10	1·22	4·37
Lanark	4,024	7·23	0·60	3·83
Stirling	440	0·79	0·40	1·02
Dumbarton	466	0·84	0·83	2·19
Argyll	772	1·39	0·84	2·28
Bute	129	0·23	0·84	2·15
Border zone	8,665	15·58	0·74	3·16
Wigtown	110	0·20	0·26	0·91
Kirkcudbright	67	0·12	0·16	0·61
Dumfries	123	0·22	0·14	0·54
Peebles	15	0·02	0·10	0·20
Selkirk	6	0·01	0·04	0·14
Edinburgh	456	0·82	0·17	0·82
Linlithgow	122	0·22	0·26	0·58
Clackmannan	63	0·11	0·25	0·59
Kinross	18	0·03	0·20	0·33
Fife	240	0·43	0·13	0·48
Perth	224	0·40	0·16	0·39
Outer zone	1,444	2·60	0·16	0·56
Rest of Highlands	870	1·57	0·09	0·38
,, Lowlands	94	0·16	0·07	0·17
Birthplace not known	119	0·21	—	—
England and Wales	850	1·53	0·93	—
Ireland	4,994	8·98	0·72	—
Other parts	251	0·45	0·92	—
Total	55,638	100·00	1·55	—

Glasgow presents similar features.* The city, within its municipal limits, has a population of 511,415 souls, and the native county element amounts to 62·13 per cent., and is consequently somewhat higher than in the rural parts of Lanark and Renfrew. The population is largely recruited from the Highlands and from Ireland. The rural parts of Lanark and Renfrew have furnished comparatively small contingents, and although taking the lead, as far as numbers go, they are exceeded by Dumbarton, Argyll, and Bute, when these numbers are compared with the total number of natives who furnished the migrants. The influence of geographical position upon migration is very clearly illustrated in Glasgow. The large number of migrants from Argyll and Bute shows that the sea is frequently a less formidable obstacle than are difficult roads through mountain passes.

Very conclusive, too, as to the law which governs migration is the distribution of the migrants along the currents of migration

* The details for Glasgow are as follows :—

Natives of	Number.	Percentage of Population of Glasgow.	Percentage of Natives Enumerated in Scotland.	Percentage of Migrants.
Glasgow	262,146	51·26	70·72	—
Lanark and Renfrew (rest)	51,607	10·09	10·76	33·81
Ayr	21,631	4·23	9·29	33·38
Bute	1,681	0·33	10·91	28·06
Argyll	10,651	2·08	11·53	31·51
Dumbarton	7,184	1·40	12·42	33·72
Stirling	10,742	2·10	9·66	24·98
Edinburgh and Linlithgow	13,090	2·56	4·06	17·00
Rest of Lowlands	9,642	1·88	2·90	8·88
Northern Scotland	34,371	6·72	2·50	10·88
England and Wales	16,026	3·14	1·74	—
Ireland	67,109	13·12	30·68	—
Other parts	4,682	0·91	17·21	—
	511,415†	100·00	—	—

† Inclusive of 853 natives of Scotland whose place of birth is unknown.

which set towards Glasgow. We find thus that natives of Perth form 4·55 per cent. of the population of Stirling, 1·54 per cent. of that of Dumbarton, 1·43 per cent. of that of Glasgow, and only 0·77 per cent. of that of the more distant rural parts of Lanark and Renfrew. The natives of Argyll number 3·10 per cent. in Dumbarton, 2·08 per cent. in Glasgow, and 1·88 per cent. in Lanark and Renfrew outside Glasgow.

The proportion of natives of Fife in the counties lying between Fife and Glasgow (in per cent.) is as follows:—

FIFE.

Perth, 3·3. Kinross, 19·7. Clackmannan, 6·1. Edinburgh, 4·0. Linlithgow, 2·1.
Stirling, 1·7. Lanark (outside Glasgow), 0·98.
GLASGOW, 0·97.
Renfrew, 0·22.

2. *Border Towns.*—The currents of migration towards towns increasing in population flow everywhere subject to the same law, although their effect, as exhibited in a preponderance of the native elements in the towns, and in that of the border elements in the surrounding rural parts, are not infrequently obscured by the operation of other circumstances. One of these is geographical position. A town lying near the boundary of a county virtually becomes a centre of attraction to migrants from two counties. This would necessarily result in a depression of the native county element in the population of the town, accompanied by a corresponding increase in the border element. In nineteen border towns, having a total population of 2,015,146 souls, the effect of geographical position upon the composition of the population is sufficient to warrant their being placed into a separate group. In twelve of these towns the native county element is below what it is in the rural parts of the county, whilst the border element is higher; in four (Burnley, Oldham, Hull, and Sheffield) both the native county element and the border element are in excess, whilst in three (Derby, West Bromwich, and Swansea) both the native county element and the border element are depressed below the level of the rural parts of the counties in which the towns lie. In dealing with towns of this class we obtain a more truthful view of the constituent elements of the population if we deal with them as if they were situated in two counties, and make both contribute towards the native county element. As an illustration of this class of towns we have selected Birmingham with Aston Manor, the requisite details for which are given in the following table:—*

* The table contains more information than is requisite for settling the point under consideration. An examination of it, with the help of the maps, and especially of Map 6, will make apparent the set of some of the main currents of migration, as well as the influence of counter attractions.

Natives of	Number.	Percentage of Population of Birmingham.	Percentage of Natives Enumerated in England and Wales.	Percentage of Migrants from each County.
Warwickshire	309,726	68·13	4·44	—
Worcester	23,669	5·30	6·0	18·1
Stafford	30,964	6·81	3·2	13·9
Derby	2,246	0·50	0·49	1·74
Leicester	3,929	0·86	1·2	4·5
Northampton	3,160	0·70	1·1	3·5
Oxford	3,636	0·80	1·6	4·00
Gloucester	11,106	2·44	1·83	6·00
Border zone	78,710	17·31	2·09	8·42
Lancashire	4,826	1·06	0·17	1·77
Cheshire	1,257	0·27	0·21	0·71
Shropshire	6,269	1·38	1·99	5·30
Hereford	4,222	0·93	2·87	7·12
Monmouth	800	0·18	0·41	1·45
Somerset	2,277	0·50	0·41	1·21
Western belt	19,651	4·32	0·42	2·03
Yorkshire	3,637	0·80	0·14	1·11
Nottingham	1,829	0·40	0·48	1·88
Rutland	167	0·03	0·59	1·18
Lincoln	1,062	0·23	1·98	0·71
Huntingdon	219	0·05	0·28	0·62
Redford	555	0·12	0·32	0·93
Buckingham	1,092	0·24	0·50	1·23
Berkshire	722	0·16	0·31	0·77
Eastern belt	9,283	2·04	0·21	1·07
Remainder of England and Wales	24,484	5·39	0·19	0·72
Scotland	1,882	0·41	0·74	—
Ireland	7,440	1·64	1·31	—
Other parts	3,440	0·76	1·14	—
Total	454,616	100·00	1·71	—

If we looked upon Birmingham as a town common to Warwick and Worcestershire, its native element would at once be raised to $68{\cdot}13 + 5{\cdot}30 = 73{\cdot}45$ per cent., whilst its border element would be depressed to a corresponding degree. Even though we reckoned Shropshire towards the border element, to make up for the transfer of Worcestershire, the town would still stand the test, viz., its native county element would be stronger than in the rural parts of Warwickshire, whilst its border element would be weaker.

A similar emendation in the case of the other towns of this category would furnish analogous results, as will at once be seen by

comparing the following table with the general table at the end of this paper.

Towns.	Native County Element drawn from	Remaining Border Element.
		Per cnt.	Per cnt.
Burnley	Lanc. (77·4) and York (8·5)	85·9	2·3
Oldham	„ (85·1) „ (7·1)	92·2	4·9
Hull	York (73·3) and Linc. (8·3)	81·6	3·3
Sheffield	„ (74·8) and Derby (4·7)	79·5	5·4
Derby	Derby (65·5), and Leic. (8·8)	74·0	8·2
West Bromwich	Staff. (76·8) and Worc. (6·1)	82·9	7·0
Swansea	Glam. (64·2) and Carn. (5·4)	69·6	2·2
Birkenhead	Cheshire (49·5) and Lanc. (15·3)	64·8	5·6
Stockport	„ (61·6 „ (21·2)	82·8	4·1
Plymouth	Devon (74·5) and Corn. (10·1)	84·6	1·9
South Shields	Durh. (63·9) and Northbld. (12·7)	76·6	3·4
West Ham	Essex (38·4) and Midd. (26·1)	64·5	9·1
Wolverhampton	Staff. (72·9) and Salop (5·6)	78·5	8·8
Croydon	Surrey (45·7) and Kent (7·5)	53·2	23·2
Birmingham	Warwick (68·1) and Worc. (5·3)	73·4	11·5
Dumfries	Dumf. (53·9) and Kirkcudb. (23·3)	77·2	5·2
Dundee	Forfar (66·0) and Perth (8·1)	74·1	8·1
Inverness	Inv. (62·1), Ross (15·4), and Nairn (1·5)	79·0	8·0
Stirling	Stir. (59·9) and Perth (10·4)	70·3	10·8

3. We have thus disposed of forty-five towns, all of which recruit their population in the main from the county in which they are situated, or in the case of border towns, from two contiguous counties. But there are towns which, either on account of their size or rapid growth, absorb so considerable a number of migrants, that the resources in men of the country immediately surrounding them are not able to supply their wants. In towns like these the native county element, owing to the inflow of strangers, sinks below what it is in the surrounding country. It is obvious, for instance, that large towns like Manchester, Salford, and Liverpool, having jointly a population of 1,070,157 souls, while rural Lancashire only numbers 1,315,299 are not likely to find a productive recruiting ground in their immediate neighbourhood, even if there existed no other larger towns in Lancashire to which migrants are attracted. The large towns which we shall consider are:—

	Population of Towns.	Population of Rural Part of Country.
London	3,816,483	2,095,041*
Liverpool	552,508	1,315,299†
Manchester-Salford	517,649	
Edinburgh-Leith	287,842	100,994
Dublin	345,245	73,665

* Of an enlarged county including all Middlesex, Surrey, Kent, and Essex.
† In Lancashire, outside the ten large towns included in our table.

London—It will be our task to show that the recruiting process goes on in these towns in accordance with the law suggested, notwithstanding the exceptional position which they occupy on account of their large population.

	Natives of Counties named in first Column Enumerated in London.	Percentage of the Population of London.	Percentage of Natives of each County.	Percentage of Enumerated Migrants from each County.	Distribution of the Natives of London throughout England and Wales.		
					Number Enumerated.	Percentage of Migrants from London.	Percentage of Population of Counties.
London (metropolis).....	2,401,955	62·94	80·4	—	2,401,955	—	62·94
Middlesex (extra metrop.)	97,736	2·56	35·5	60·8	94,848	16·22	20·19
Surrey („)	63,284	1·66	18·9	50·6	66,476	11·37	14·14
Kent („)	95,505	2·50	13·6	49·7	54,638	9·34	7·70
Essex	92,553	2·42	16·8	52·1	83,326	14·25	14·46
Hertford.....	35,793	0·94	15·8	41·0	14,845	2·54	7·31
Metropolitan group	394,871	10·34	18·9	50·8	314,133	53·73	13·10
Norfolk	49,999	1·40	9·0	30·5	7,359	1·26	1·66
Suffolk	53,316	1·31	12·0	36·1	7,581	1·30	2·12
Cambridge	25,085	0·66	10·9	29·8	3,792	0·65	2·04
Huntingdon	7,392	0·19	9·3	20·9	1,054	0·19	1·77
Northampton	17,569	0·46	5·9	19·2	5,171	0·88	1·90
Bedford	15,677	0·41	9·0	26·4	3,703	0·63	2·47
Buckingham	27,282	0·71	12·4	30·7	6,322	1·08	3·60
Oxford	22,373	0·59	10·0	24·9	4,414	0·75	2·46
Berkshire	32,324	0·85	13·7	34·4	10,005	1·71	4·53
Wilts	31,316	0·82	9·5	25·2	4,661	0·80	1·80
Hampshire	53,694	1·41	9·5	34·5	25,488	4·36	4·30
Sussex	44,401	1·16	9·6	36·3	34,022	5·82	6·93
Inner belt.....	380,427	9·97	9·9	30·2	113,572	19·43	3·45
Somerset.....	43,522	1·14	7·9	24·7	7,368	1·26	1·57
Dorset.....	18,214	0·48	7·8	21·9	3,471	0·59	1·81
Devon	58,956	1·55	8·6	30·6	11,914	2·04	1·97
Cornwall	16,534	0·43	4·3	17·9	2,219	0·38	0·67
South-western group..	137,226	3·59	7·4	24·7	24,972	4·27	1·57
Lincoln	17,730	0·46	3·3	11·6	5,710	0·98	1·22
Nottingham	7,874	0·21	2·1	8·1	4,334	0·74	1·11
Rutland	1,514	0·04	5·3	10·8	433	0·07	2·02
Leicester.....	8,367	0·22	2·5	9·7	4,114	0·70	1·28
Warwick.....	25,302	0·66	3·1	14·8	13,637	2·33	1·86
Worcester	9,535	0·25	2·4	7·3	4,293	0·73	1·13
Gloucester	34,135	0·89	5·6	18·5	10,417	1·78	1·82
Hereford.....	6,674	0·17	4·5	11·3	1,597	0·27	1·31
Monmouth	4,498	0·12	2·3	8·2	1,439	0·24	0·68
Outer belt.....	115,629	3·03	3·5	11·0	45,974	7·86	1·42

	Natives of Counties named in first Column Enumerated in London.	Percentage of the Population of London.	Percentage of Natives of each County.	Percentage of Enumerated Migrants from each County.	Distribution of the Natives of London throughout England and Wales.		
					Number Enumerated.	Percentage of Migrants from London.	Percentage of Population of Counties.
Derby	6,081	0·16	1·3	2·6	3,778	0·65	0·82
Stafford	12,771	0·33	1·3	5·7	6,886	1·18	0·70
Shropshire	6,865	0·18	2·2	5·7	1,796	0·31	0·72
Cheshire	6,077	0·16	1·0	3·5	5,163	0·88	0·80
Midland group	31,794	0·83	1·3	4·6	17,623	3·02	0·77
Lancashire	28,042	0·73	1·0	10·3	27,173	4·65	0·79
Westmoreland	1,103	0·03	1·4	3·6	409	0·07	0·63
Cumberland	3,361	0·09	1·3	5·3	1,104	0·19	0·45
North-western group	32,506	0·85	1·0	8·9	28,686	4·89	0·76
Yorkshire	32,223	0·84	1·2	9·9	22,295	3·81	0·77
Durham	8,070	0·21	1·2	7·6	5,883	1·01	0·68
Northumberland	7,778	0·20	1·8	6·5	3,618	0·62	0·83
North-eastern group	48,071	1·25	1·3	8·7	31,796	5·44	0·76
Glamorgan	4,296	0·11	1·1	9·7	3,594	0·61	0·70
Carmarthen	1,602	0·05	1·1	3·7	388	0·07	0·31
Pembroke	2,832	0·07	2·5	8·2	1,011	0·17	1·10
Cardigan	2,352	0·06	2·7	9·9	346	0·06	0·49
Brecknock	1,200	0·03	1·8	4·7	351	0·06	0·61
Radnor	658	0·02	1·9	4·2	162	0·03	0·69
Montgomery	1,651	0·04	2·0	6·0	284	0·05	0·43
Flint	746	0·02	0·8	2·4	413	0·07	0·51
Denbigh	1,112	0·03	0·9	2·9	499	0·08	0·45
Merioneth	558	0·01	1·1	5·5	183	0·03	0·35
Carnarvon	784	0·02	0·7	4·1	447	0·08	0·38
Anglesey	438	0·01	0·7	2·6	266	0·05	0·52
County not stated	5,318	0·14	0·4	—	—	—	—
Wales	23,547	0·62	6·8	0·7	7,944	1·36	0·58
Scotland	49,554	1·30	1·3	17·9*	—	—	—
Ireland	80,778	2·12	1·4	10·3*	—	—	—
Abroad	111,626	2·92	—	31·9*	—	—	—
Total	3,816,483†	100·00	—	—	2,986,655	100·00	11·46

* Percentage of natives of Scotland and Ireland enumerated outside the kingdom of their birth, and of natives of foreign parts enumerated throughout the United Kingdom.

† Inclusive of 18,499 natives of England whose county of birth was not stated.

The leading facts connected with this subject are presented in the table on p. 206, which classifies the population of London according to birthplaces, and exhibits the proportion which the

natives of each county enumerated in London bear to the number of natives enumerated throughout England and Wales, and to the migrants from each county. This last feature is shown graphically on Map 8.

If we look upon London as the capital of an enlarged metropolitan county, including Middlesex, Surrey, Kent, Essex, and Herts, and then compute the native county element, as we have done in the table in the appendix, this element will be found to amount to 73·3 per cent. of the total population of London, and to 74·2 per cent. of the population of the rural parts of the enlarged metropolitan county. The "border element," on the other hand, only reaches 9·97 per cent. in London, whilst it amounts to 10·56 per cent. in the rural parts. The excess is slight, but it is nevertheless significant.*

Looking to the proportion of migrants who have gone from each county to London, we find that it bears a most pronounced relation to distance, modified by facility of access and the vicinity to other centres of absorption. Out of what we have described above as the rural parts of an enlarged metropolitan county 50·8 out of every hundred migrants went to London. A second group of counties, stretching from Norfolk and Suffolk to Hampshire and Surrey, and included in the accompanying table under the designation of "inner belt," sent 380,427 or 30·2 per cent. of its migrants to London.† A south-western group of counties, including Somerset, Dorset, Devon, and Cornwall, is represented in London by 24·7 per cent. of its migrants, whilst a centre belt of counties, extending from the Severn to the Humber, is represented by 11·0 per cent. The migration from these counties already exhibits the counter attraction of other centres of absorption in the centre and north of England, and this influence is still more marked in the case of a group embracing Derbyshire, Staffordshire, Shropshire, and Cheshire, of whose migrants only 4·09 per cent. have reached London. Of the migrants from Wales 6·8 per cent. had found their way to the metropolis, whilst the north of England despatched 8·7 per cent. On comparing the contingents of migrants furnished by each county we find that although they correspond upon the whole pretty fairly with distance and facility of access, and do so most decisively as regards the counties nearest

* Population of London 3,816,483, of rural parts of enlarged metropolitan county, 2,298,110; native county element, 2,796,826 and 1,706,441; border element, 380,327 and 242,682.

† The natives who form this "inner belt" enumerated in the rural parts of the enlarged metropolitan county only amounted to 242,682, or 19·2 per cent. of all migrants, but they constituted 10·56 per cent. of the population, whilst the 30·2 per cent. who had gone to London only constituted 9·97 per cent. of the population.

to London, that three of the most distant occupy an exceptional position. These counties are Devonshire, Lancashire, and Yorkshire. That Devonshire should send a larger contingent of her migrants than other counties at an equal distance from London, but situated in the centre or north of England, is only what might have been expected, for in consequence of the geographical position of their county, the eyes of the native of Devonshire desirous of migrating turn naturally to the eastward, and London is the great focus of light which attracts him (see p. 190). The case of Lancashire and Yorkshire differs from that of Devonshire, for whilst the last is a "county of dispersion," the former are "counties "of absorption," and emigration from them is almost insignificant. Where such is the case the migrants belong in a large measure to a select or special class, and they go by preference to a centre of culture, commerce, and industry like London.

There still remains to be considered the displacement of the population of the counties surrounding London resulting from the currents of migration setting in the direction of the metropolis. If our suggestion as to the law of migration really embodies the facts of the case, then the number of natives of one of the counties of the "metropolitan group" and "inner belt" not in immediate contact with the metropolis met with in London should be less, proportionately to the population, than in the intervening counties. This is actually the case of the natives from all the thirteen counties, and the decrease on approaching London is progressive in all but three, namely, Norfolk, Northampton, and Cambridge.

The results summarised are presented in the following table :—

Natives of	In London.	In Intervening Counties.	Percentage of Population	
			Of London.	Of Intervening Counties.
Norfolk	49,999	40,338	1·40	2·31
Suffolk	53,316	20,068	1·31	3·49
Cambridge	25,085	5,381	0·66	0·81
Huntingdon	7,392	3,820	0·19	0·45
Northampton	17,569	8,784	0·46	0·88
Bedford	15,677	8,555	0·41	1·27
Hertford	35,893	11,714	0·94	2·49
Bucks	27,282	8,224	0·71	1·75
Oxfordshire	22,372	9,597	0·59	1·48
Perthshire	32,344	16,825	0·85	1·55
Wilts	31,316	30,422	0·82	1·80
Hampshire	53,694	16,179	1·41	3·68
Sussex	44,401	38,634	1·16	3·37
Total	416,320	218,541	10·91	25·34

As this migration towards and into London affords a good test,

we feel justified in going somewhat further into detail, and in order to save space we do so in a tabular form :—

Natives of	Proportion in per Cent. to Population of Intervening Counties.*	Ditto London.
Norfolk	In Suffolk, 54·5; Cambridge, 4·04; Essex, 1·30; Herts, 0·70; Middlesex, 0·95	1·40
Suffolk	„ Essex 3·49	1·31
Cambridge	„ Herts, 1·16; Middlesex, 0·64	0·66
Huntingdon	„ Beds, 1·51; Herts, 0·29; Middlesex, 0·20	0·19
Northampton	„ Bucks, 1·98; Beds, 1·56; Herts, 0·53; Middlesex, 0·40	0·46
Bedford	„ Herts, 2·62; Middlesex, 0·69	0·41
Herts	„ Middlesex 2·49	0·94
Bucks	„ „ 1·75	0·71
Oxford	„ Bucks, 3·22; Middlesex, 0·83	0·59
Berks	„ „ 2·21; Surrey, 1·60; Middlesex, 1·26	0·85
Wilts	„ Berks, 3·55; Hants, 2·46; Surrey, 10·3; Middlesex, 0·78	0·82
Hampshire	„ Surrey 36·8	1·41
Sussex	„ „ 4·10; Kent, 2·91	1·16

* Only the extra-metropolitan parts of Middlesex, Surrey, and Kent are here referred to.

These proportions show very distinctly the effect which distance has upon migration, and how the "absorption" of migrants depends upon the population of the counties where they settle. The natives of Norfolk, Cambridge, and Northampton, in proportion to the population, are slightly less numerous in extra-metropolitan Middlesex than they are in London; and those of Norfolk are moreover less strongly represented in Herts than they are in Middlesex. But as the greater part of extra-metropolitan Middlesex, and more especially that portion of it which is most likely to attract migrants, actually lies beyond London to a migrant coming from the counties named, whilst Herts is outside the route which the main stream of migrants from Norfolk may be presumed to follow, we are entitled to state that the migrants from all these counties decrease, proportionately to the population, the nearer we approach London, and are least numerous in London itself.

It is only when we trace the currents of migration from the more distant counties that this rule appears to be broken through, and the fact of the metropolis exercising a preponderating attraction out of proportion to its population becomes apparent. On leaving Yorkshire, for instance, we find that the natives of that county decrease proportionately to the general population until we reach Herts or Middlesex; but that in Middlesex, and especially in London, they are proportionately more numerous than in Herts Cambridge, or Hunts. The decrease could be made continuous

only if we removed 851 natives of Yorkshire from Middlesex, and 13,427 from London, which would reduce their proportion to the general population of these counties to respectively 0·50 and 0·49 per cent.

The details of the distribution of the natives of Yorkshire on the road to London are as follows:—*

YORKSHIRE.

Derby, 16,467 (3·56). Notts, 10,163 (2·59). Lincoln, 16,683 (3·55).
Leicester, 3,017 (0·94). Rutland, 202 (0·94).
Northampton, 2,031 (0·75). Hunts, 389 (0·65).
Bucks, 726 (0·41). Beds, 699 (0·47). Cambridge, 991 (0·53).
Herts, 1,032 (0·51).
Extra-metropolitan Middlesex, 3,193 (0·68).
LONDON, 32,223 (0·84).

If we trace the natives of Cornwall along the routes leading to London, the result will be found to be analogous, inasmuch as they are more numerous in London than in any intervening county, Devonshire excepted. The natives of that county bound for London evidently follow two routes, the one overland, the other by sea. The overland stream appears to die almost away on reaching Wilts, whilst a considerable migration by sea accounts for the strength of the Cornish element in Hampshire. The following tabular statement illustrates this:—

CORNWALL.

Devon, 27,220 (4·50).
Dorset, 561 (0·29). Somerset, 1,676 (0·35).
Hants, 2,876 (0·40). Wilts, 325 (0·12).
Berks, 321 (0·15). Extra-metropolitan Surrey, 1,256 (0·29).
Extra-metropolitan Middlesex, 1,284 (0·27).
LONDON, 16,534 (0·40).

Liverpool and Manchester.—These two towns having jointly a population of 1,070,157 souls, whilst rural Lancashire, outside the ten other towns included in our table, only numbers 1,315,299, can hardly be expected to find a productive recruiting ground in their immediate neighbourhood; and this all the less so, as there exist numerous other large and growing towns in that part of England. Hence the native county element is exceptionally weak, and the population is largely made up of elements drawn from a considerable distance. The Irish element is conspicuous in both, more especially in Liverpool, which is within easier reach of Irishmen than of the majority of natives of England; indeed we should be justified in treating Ireland as a border county of Lancashire.

* The figures in brackets give the proportion of natives of Yorkshire to the general population of each county in per cent.

The Scotch too are numerous in Liverpool, and next to them rank the natives of North Wales. Proportionally to its population, North Wales furnished a larger contingent to the population of Liverpool than any other part of the United Kingdom, and out of every 100 natives of North Wales enumerated in other parts of England and Wales, as many as 17 resided at Liverpool when the last census was taken.

The leading facts connected with the birthplaces of the inhabitants of Liverpool and Manchester-Salford are given in the following table:—

Natives of	Number of Natives from each County, &c.		Percentage of the Population of		Percentage of the Natives of each County, &c.		Percentage of the Migrants from each County, &c.	
	Liverpool.	Manchester.	Liverpool.	Manchester.	Liverpool.	Manchester.	Liverpool.	Manchester.
Lancashire	345,992	353,126	62·62	68·22	12·22	12·44	—	—
Cheshire	16,242	22,714	2·94	4·36	2·67	3·73	9·21	12·88
North Wales .	18,297	6,188	3·31	1·20	3·46	1·17	17·49	5·92
Salop	4,631	4,427	0·84	0·86	1·48	1·41	3·92	3·75
Staffordshire .	4,042	7,474	0·73	1·44	0·41	0·76	1·81	3·35
Derbyshire	1,492	6,235	0·27	1·20	0·33	1·36	1·15	4·82
Notts	1,157	2,529	0·21	0·48	0·30	0·66	1·19	2·60
Yorkshire	8,709	5,504	1·58	1·06	0·33	0·20	2·67	1·69
Westmoreland	1,540	1,046	0·28	0·20	1·98	1·34	5·03	3·42
Cumberland ..	5,960	2,239	1·08	0·43	2·34	0·88	9·38	3·52
London	6,398	6,450	1·16	1·25	0·21	0·22	1·10	1·10
Rest of England and Wales	30,897	43,186	5·59	8·36	0·24	0·34	0·78	1·08
Scotland	20,434	8,953	3·70	1·73	0·55	0·25	7·41*	3·25*
Ireland	70,977	38,550	12·84	7·45	1·21	0·66	9·09*	4·93*
Other parts....	15,768	9,028	2·85	1·75	—	—	4·43*	—
	552,508	517,649	100·00	100·00	—	—	—	—

* Percentage of natives of Scotland and Ireland enumerated outside the kingdom of their birth, and of natives of foreign parts enumerated throughout the United Kingdom.

Edinburgh-Leith.—The Scotch metropolis had 287,842 inhabitants in 1881, whilst rural Edinburghshire had only 100,994. Both town and country increase rapidly in population, and as both owe this increase in a large measure to migration, the native county element is exceptionally weak within them. This is more especially the case in the city, whose colleges and law courts attract migrants from the more distant parts of Scotland. How much more attractive the city is in the eyes of migrants than rural Edinburghshire may be seen from the following consideration: In 1881 112,192

natives of other parts of Scotland (including rural Edinburghshire) were enumerated in Edinburgh-Leith, and 47,986 natives of Edinburgh-Leith in the rest of Scotland, leaving a balance of 65,206, equal to 22·6 per cent. of its population in favour of the city. The balance in favour of rural Edinburghshire, obtained in the same way, only amounts to 8,053 migrants, or to 7·9 per cent. of the population. The details are as follows:—

Edinburgh-Leith.

	To or from Rural Edinburghshire.	To or from Border Counties.	To or from rest of Scotland.
Immigrants	14,423	44,067	53,702
Emigrants	11,375	22,022	39,589
Balance	3,048	22,045	39,113

Rural Edinburghshire.

	To or from the City.	To or from Border Counties.	To or from rest of Scotland.
Immigrants	11,423	22,024	8,264
Emigrants	14,423	14,549	4,638
Balance	− 3,048	7,475	3,626

Further particulars on the composition of the population of Edinburgh-Leith and of rural Edinburghshire are given in the following table:—

Natives of	Inhabitants.		Percentage of the Population.		Percentage of Natives Enumerated in Scotland.		Percentage of Migrants Enumerated in Scotland.	
	City.	Rural.	City.	Rural.	City.	Rural.	City.	Rural.
Edinburgh-Leith	146,417	11,375	50·87	11·26	75·32	5·85	—	23·70
Rural Edinburghshire	14,423	48,561	5·01	48·08	17·55	59·08	42·93	—
Eight border counties*	44,067	22,024	15·31	21·81	4·11	2·06	18·54	9·26
Rest of Scotland	53,702	8,264	18·66	8·18	2·62	0·40	9·31	1·43
England & Wales	14,193	3,968	4·93	3·93	15·46	4·32	—	—
Ireland	8,875	5,892	3·08	5·83	4·06	2·24	—	—
Other parts	6,165	910	2·14	0·90	22·34	3·30	—	—
	287,842	100,994	100·00	100·00	—	—	—	—

* Including Fife.

Dublin.—The population of Dublin, or rather of the two Dublin unions, comprehends 82 per cent. of the total population of the county. Dublin consequently recruits its population very largely in the border counties, and in a lesser degree in the remainder of Ireland. Map 8, which illustrates migration into the county of Dublin, very fairly illustrates the leading features of migration into Dublin town likewise, whilst the following table contains the particulars of the composition of the population of Dublin town:—

Natives of	Number.	Percentage of the Population of Dublin.	Percentage of Natives Enumerated in Ireland.	Percentage of Migrants Enumerated in Ireland.
Dublin county	209,940	60·81	73·53	—
Meath	9,120	2·65	9·22	41·64
Kildare	16,736	4·84	22·22	91·45
Wicklow	15,833	4·59	17·95	54·97
Rest of Ireland	68,359	19·80	1·51	15·82
England and Wales	16,948	4·91	24·42	—
Scotland	4,220	1·22	18·92	—
Other parts	4,059	1·18	20·50	—
	345,215	100·00	—	—

4. The towns which fall next under our consideration increase far more rapidly in population than the country districts which surround them, or they increase at all events at a tolerable rate, whilst the rural population surrounding them either gains but little in numbers or is actually retrogressive.

The ten towns of this type are divisible into two groups:—

1. Towns in "counties of absorption" the rural population of which increases at a rate equal or superior to that of the general population of the country.

2. Towns in "counties of dispersion" the rural population of which increases very slowly or decreases.

To these we feel inclined to add four Irish towns, of which one (Cork) gains slowly in population, whilst the three others decrease at a rate much below that at which the rural population of the counties in which they are situated decreases.

These towns are:—*

* According to the census of 1871 the following additional towns represent the same type: Barrow-in-Furness, Reading, Lincoln, Redford, Yarmouth, Oxford, Cambridge, Bury St. Edmunds.

	Increase (or Decrease) of Population, 1871-81.	
	Town.	Rural parts of County.
First Group—	Per cnt.	Per cnt.
Middlesbrough	40	17
Nottingham	34	14
Cardiff	44	26
Leicester	28	14
Second Group—		
Northampton	26	8
Ipswich	17	Sta.
Aberdeen	19	3·7
Perth	13	− 2·1
Ayr	17	6
Norwich	9	− 0·4
Irish Group—		
Cork	1·9	− 5·1
Londonderry	0 5	− 7·9
Limerick	2·0	− 6 9
Waterford	− 3·6	− 9·6

In all these towns the native county element is below what it is in the rural parts of the counties in which they are situated, for when the increase of the population of town and country is so disproportionate, the resources of the latter in men are frequently insufficient to meet the demand, and the hands required in the workshops and factories have to be drawn from a wider area. This must naturally lead to a depression of the native county element. Various circumstances contribute to promote this immigration from the more distant parts of the country, such as the vicinity of competing towns, or the demand for a particular class of labour which the surrounding country is not able to furnish. Emigration to foreign parts is also of some influence, more especially in Ireland.

Middlesbrough affords a suitable illustration of this type of towns. Its rapid growth, the heterogeneous composition of its population, and the preponderance of the male sex, recall features generally credited only to the towns of the American west. The population of Middlesbrough increased 108 per cent. between 1861 and 1871, and 40 per cent. between 1871 and 1881. The composition of its population at the time of the last three censuses very faithfully reflects this rapid growth. In 1861* it still had a native county element of 73·2 per cent., but soon after this miners

* We take the superintendent-registrar's district of Guisborough (22,128 inhabitants) as representing the Middlesbrough (18,992 inhabitants) of 1861, no other details of the birthplaces for that year being available.

and ironworkers flocked into the town in increasing numbers from Durham, South Wales, Staffordshire, and Scotland, as also Irish labourers, so that in 1871 the native county element was found to have sunk to 50·1 per cent., that is only about one half the inhabitants were natives of Yorkshire. During the next decade this immigration continued, but at a much diminished rate, and as the children of the older immigrants were counted towards the native county element, this element once more rose to 55 per cent.

There is no county of England and Wales which has not contributed its contingent towards the population of Middlesbrough, although the contingents of the nearest border counties, and of Yorkshire itself, have been heaviest. To nimble-fingered migrants from the textile manufacturing districts a town of ironworks and miners held out but few inducements, whilst sturdy miners and ironworkers from Staffordshire, Scotland, and South Wales found their way to it, notwithstanding the distance they had to travel. This accession of migrants of a special class is a very marked feature in towns of this type, and in order to exhibit it we have included in our table all counties 0·10 per cent. of whose migrants were enumerated in Middlesbrough. Nevertheless it must not be forgotten that these "special" migrants form but a fraction of the population, and that the very mixed composition of the population of rapid growing towns is the outcome of an inflow of migrants from all parts of the country, rather than from any particular district.

Composition of the Population of Middlesbrough according to Birthplaces.

Natives of	Numbers.			Percentage.		
	1861.	1871.	1881.	1861.	1871.	1881.
Yorkshire	16,179	19,858	30,654	73·2	50·1	54·8
Durham	1,854	5,281	7,560	8·4	13·3	13·5
Northumberland	329	929	1,270	1·5	2·4	2·3
Cumberland	138	537	543	0·6	1·4	1·0
Lancashire	208	725	892	0·9	1·8	1·6
Stafford	109	1,031	1,197	0·4	2·6	2·1
Lincoln	639	556	717	2·9	1·4	1·3
Norfolk	278	547	977	1·2	1·4	1·7
Monmouth and Wales	267	1,530	1,680	1·2	3·9	3·0
Rest of England	1,404	3,182	3,589	6·4	8·2	8·2
Scotland	239	1,163	1,554	1·1	2·9	2·8
Ireland	442	3,621	3,686	2·0	9·1	6·6
Other parts	42	603	615	0·2	1·5	1·1
Total	22,128*	39,563	55,934	100·0	100·0	100·0

* In the superintendent-registrar's district of Guisborough. Middlesbrough only had 18,992 inhabitants.

Middlesbrough in 1881. *Composition of its Population according to Birthplaces.*

Natives of	Number.	Percentage of Population of Middlesbrough.	Percentage of Natives Enumerated in England and Wales.	Percentage of Migrants of Counties Enumerated in England and Wales.
Yorkshire	30,654	54·82	1·14	—
Durham	7,560	13·52	0·09	7·10
Northumberland	1,270	2·27	0·30	1·18
Cumberland	543	0·97	0·21	0·85
Westmoreland	108	0·20	0·14	0·35
Lancashire	892	1·60	0·03	0·33
Derby	163	0·29	0·04	0·13
Stafford	1,197	2·14	0·12	0·54
Worcester	370	0·66	0·09	0·28
Gloucester	206	0·37	0·03	0·12
Salop	173	0·31	0·05	0·15
Warwick	224	0·40	0·03	0·12
Lincoln	717	1·28	0 13	0·47
Notts	111	0·20	0·03	0·12
Norfolk	977	1·75	0·17	0·59
Suffolk	378	0·67	0·09	0·26
Cambridge	238	0·42	0·10	0·28
Kent	311	0·55	0·03	0·13
Monmouth	371	0·66	0·19	0·67
Glamorgan	412	0·74	0·11	0·92
Brecon	78	0·14	0·12	0·29
Cardigan	37	0·06	0·04	0·15
Carmarthen	57	0·10	0·04	0·13
Pembroke	45	0·08	0·04	0·13
Carnarvon	22	0·04	0·02	0·11
Remainder of England and Wales	2,965	5·31	0·03	0·10
Scotland	1,554	2·78	0·61	—
Ireland	3,686	6·58	0·65	—
Other parts	615	1·10	0·20	—
	55,934	100·00	—	—

5. In conclusion, we have to notice those towns in which the "floating element" is so numerously represented as to result in a depression of the native county element below what it is in the rural parts of the counties to which towns of this type belong. In large cities this influence is but rarely decisive, and although the "floating element" in every commercial city, and more especially in our sea-ports, is undoubtedly large, we have been able, in most instances, to trace any deficiency in the native county element to some other more universal cause.

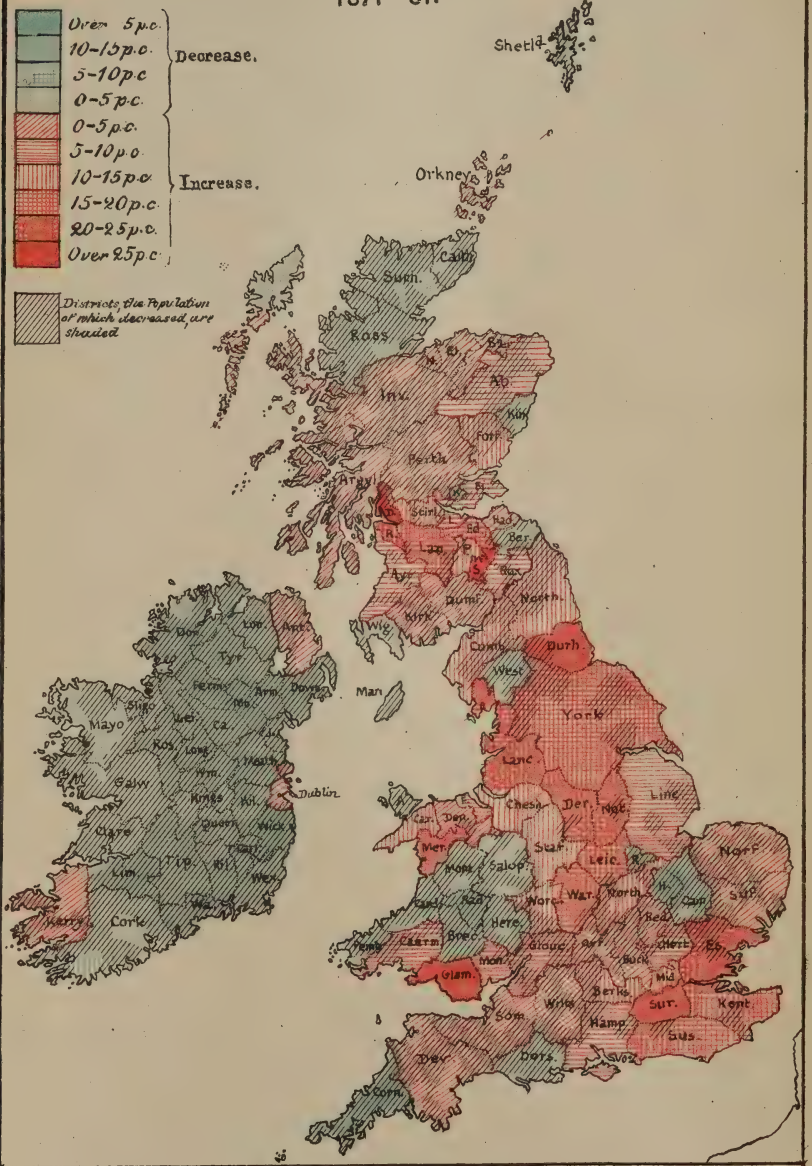
There are instances, however, where it is decisive. At Portsmouth a population of 127,989 souls included (in 1881) 9,942 men of the army and navy. We may fairly assume that a majority of these men are not natives of the county in which they temporarily reside, and, together with their dependents, they must materially affect the proportions between the constituent elements of the population, and bring about a lowering of the native county element. If we deduct these men from the population of Portsmouth, and then compute its elements, the native county element at once rises to 71·04 per cent., which is higher than in rural Hampshire, whilst the border element only rises to 9·26 per cent., and is thus still lower than outside Portsmouth. A similar depression of the native county element may be noticed in towns which are the seats of large educational establishments, such as Oxford, Cambridge, Bedford, and Winchester. Then there are health resorts and towns affected by annuitants and grass-widows, which generally also abound in ladies' colleges. Representative towns of this type are Bath and Brighton. That there is something exceptional in the composition of the population of these towns may be judged from the large preponderance of females, for whilst throughout England there are 105 females to every 100 males, there are 147 in Bath, and 128 in Brighton. If in cases of this kind we could separate the floating from the residential element of the population, it would undoubtedly be found that towns like those mentioned follow the general rule as respects the absorption of migrants.

Concluding Remarks.

It has been the object of the author of this paper to place before the Statistical Society not merely an abstract of the returns of the birthplaces of the inhabitants of the United Kingdom, but also to consider migration generally, and to determine, if possible, some law or rule by which it is governed. He is quite aware of the many imperfections of his essay, but trusts that his compilation will at least be looked upon as a contribution not altogether

INCREASE (OR DECREASE) OF THE POPULATION OF EACH COUNTY.

1871 - 81.



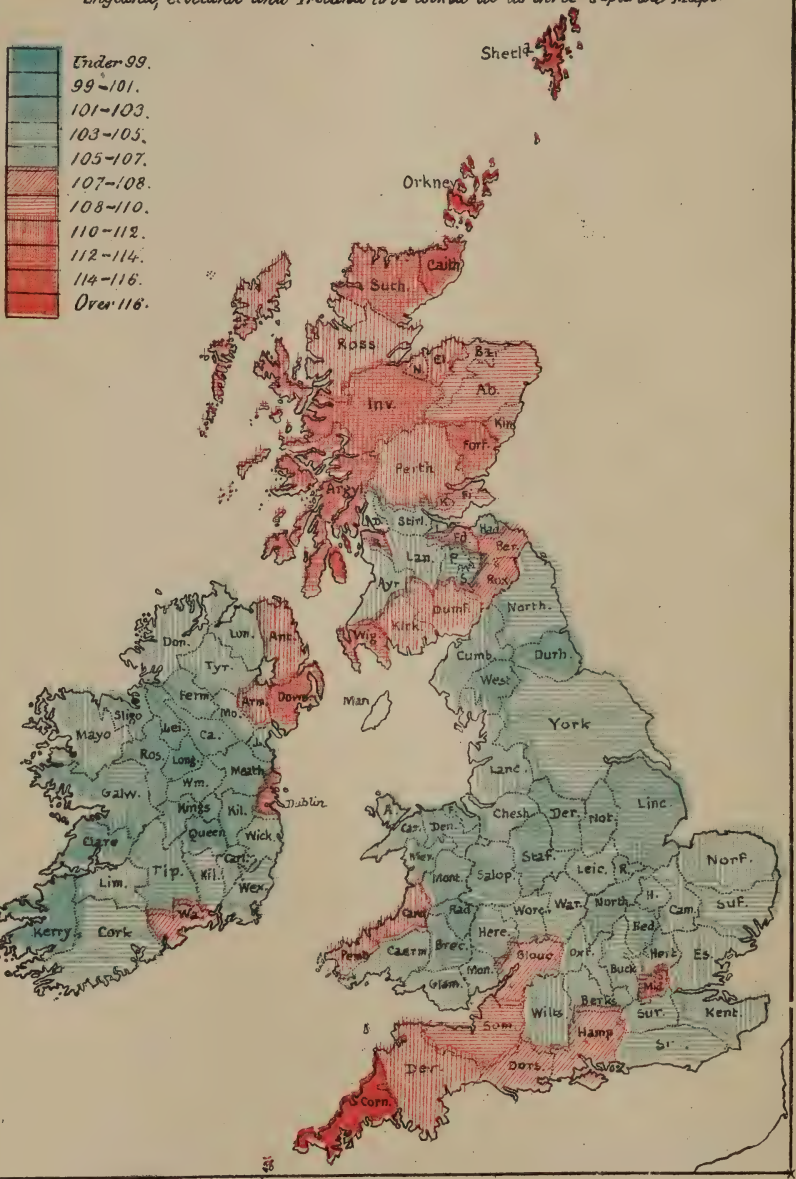
INCREASE (OR DECREASE) OF THE NATIVES OF EACH COUNTY.

1871-81.

FEMALES TO 100 MALES

AMONG THE NATIVES OF COUNTIES.

England, Scotland and Ireland to be looked at as three separate Maps.



without value to a branch of inquiry of peculiar interest to the statistician.

The accompanying maps will assist in rendering clearer some of his arguments. In most instances the line separating the two colours marks the average.

APPENDIX. *Table Illustrative of Migration*

Counties and Towns.	Population, 1881.	Natives of Counties, 1881.	Increase or Decrease, 1871-81.		Females to every 100 Males.		
			Of Population.	Of Natives.	Among Total Population.	Among Natives.	Among Native County Element.
			Per cnt.	Per cnt.			
Bedfordshire	149,473	173,985	2·2	9·9	112	103	106
Berkshire	218,363	236,015	11·2	6·4	101	106	97
Buckinghamshire	176,323	220,049	0·2	5·8	103	104	99
Cambridgeshire	185,594	229,254	− 0·8	7·9	103	106	101
Cheshire	644,037	608,589	14·6	15·5	107	104	103
Rural	500,478	—	13·1	—	106	—	102
Birkenhead	84,006	—	27·3	—	104	—	102
Stockport	59,553	—	12·3	—	116	—	113
Cornwall	330,686	386,898	− 9·1	− 2·9	113	118·9	117·0
Cumberland	250,647	254,898	13·8	9·6	101	105·5	104·9
Derbyshire	461,914	458,449	21·5	17·3	99	102	99
Derby	81,168	—	26·4	—	103	—	106
Devonshire	603,595	687,749	0·5	3·7	113	112	111
Plymouth	73,794	—	7·3	—	119	—	121
Dorset	191,028	234,883	− 2·4	4·1	104	108	104
Durham	867,258	694,238	26·6	32·2	95	102·5	101·2
Sunderland	116,548	—	18·6	—	104	—	113
South Shields	56,875	—	25·5	—	100	—	113
Essex	576,434	550,769	23·5	13·6	100	106	99
West Ham	128,953	—	105·0	—	97	—	98
Gloucestershire	572,433	606,641	7·1	13·3	112	107·4	106·6
Bristol	206,874	—	13·3	—	121	—	119
Hampshire	593,470	565,988	9·0	13·1	102	108	105
Portsmouth	127,989	—	12·7	—	105	—	116
Southampton	60,051	—	11·7	—	112	—	113
Herefordshire	121,062	146,944	− 3·5	1·4	102	105	99
Hertfordshire	203,069	226,110	5·6	7·0	106	107	101
Huntingdonshire	59,491	79,305	− 6·4	− 3·6	104	105	97
Kent	977,706	900,701	15·2	16·1	104	107	103
Lancashire	3,454,441	2,831,553	22·5	21·5	107	106·0	106·5
Rural	1,315,299	—	0·4	—	106	—	105
Blackburn	104,014	—	21·5	—	112	—	109
Bolton	105,414	—	14·3	—	111	—	110
Burnley	58,751	—	43·7	—	107	—	106
Bury	52,213	—	20·6	—	111	—	110
Liverpool	552,508	—	12·0	—	103	—	106
Manchester and Salford	517,649	—	8·8	—	109	—	111
Oldham	111,343	—	34·8	—	108	—	108
Preston	96,537	—	10·6	—	118	—	115
Rochdale	68,866	—	8·4	—	115	—	112
St. Helens	57,403	—	27·2	—	93	—	98
Leicestershire	321,258	332,902	19·2	13·7	106	103·4	104·4
Leicester	112,376	—	28·5	—	112	—	112
Lincolnshire	469,919	537,137	7·6	8·9	100	103	101
Middlesex	2,920,485	2,402,932	14·9	18·3	114	111	109
London (Metrop.)	3,816,483	2,986,655	17·3	19·9	112	—	109
Monmouthshire	211,267	194,445	8·1	20·9	95	104	101
Norfolk	444,749	555,347	1·4	4·5	107	107	105
Norwich	87,842	—	9·3	—	118	—	118
Northamptonshire	272,555	298,398	11·7	10·2	101	103	99
Northampton	51,881	—	26·0	—	106	—	108
Northumberland	434,086	427,891	12·3	14·5	103	103·6	103·4
Newcastle & Gateshead	211,162	—	19·3	—	103	—	107

in the United Kingdom.

Birthplaces, 1881.			Native County Element.	Border Element.	Distribution of Natives of each County, 1881.			Counties and Towns.
England and Wales.	Scotland.	Ireland.			In County where Born.	Border Counties.	Elsewhere in same Kingdom.	
Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	
98·7	0·28	0·33	76·7	11·3	67·1	9·9	23·0	Bedfordshire
97·8	0·48	0·67	65·1	18·0	60·2	17·2	22·6	Berkshire
98·9	0·34	0·28	74·4	15·8	59·6	29·4	11·0	Buckinghamshire
99·1	0·21	0·27	78·2	14·6	63·4	12·7	23·9	Cambridgeshire
94·2	1·22	3·67	67·1	18·5	71·0	23·5	5·5	Cheshire
96·0	0·88	2·37	70·8	17·2	—	—	—	Rural
84·9	3·94	8·81	49·5	20·9	—	—	—	Birkenhead
93·3	0·48	5·63	61·1	25·3	—	—	—	Stockport
98·3	0·19	0·51	89·0	4·8	76·4	7·0	16·6	Cornwall
88·7	4·87	5·62	76·4	6·8	75·1	18·3	6·6	Cumberland
98·1	0·35	1·13	71·3	17·9	71·8	22·7	5·5	Derbyshire
97·1	0·62	1·56	65·2	17·0	—	—	—	Derby
97 2	0·46	1·04	82·0	7·1	72·0	5·5	22·5	Devonshire
95·4	0·61	1·94	74·4	12·0	—	—	—	Plymouth
98·0	0·38	0·75	79·5	11·0	64·6	15·9	19·5	Dorset
92·2	2·85	4·24	67·8	16·2	84·7	13·4	1·9	Durham
91·0	4·04	3·84	71·2	11·6	—	—	—	Sunderland
89·1	5·39	3·60	63·9	16·1	—	—	—	South Shields
97·3	0·76	0·86	64·8	20·6	67·8	20·2	12·0	Essex
94·5	1·72	1·56	38·4	35·1	—	—	—	West Ham
97·6	0·41	0·93	73·7	13·7	69·5	13·2	17·3	Gloucestershire
96·5	0·54	1·55	76·3	5·3	—	—	—	Bristol
95·2	0·97	1·93	68·8	10·7	71·6	11·3	17·1	Hampshire
93·8	1·16	2·46	65·5	8·5	—	—	—	Portsmouth
94·9	1·13	1·27	69·8	10·4	—	—	—	Southampton
98·8	0·33	0·48	72·4	17·0	59·7	28·1	12·2	Herefordshire
98·5	0·46	0·39	68·3	17·8	61·4	24·3	14·3	Hertfordshire
99·2	0·20	0·26	74·0	14·4	55·6	15·1	29·3	Huntingdonshire
95·8	0·88	1·63	67·2	15·5	72·8	19 8	7·4	Kent
91·0	1·62	6·15	74·1	8·3	90·4	5·5	4·1	Lancashire
93·7	1·25	4·24	76·2	10·1	—	—	—	Rural
94·7	0·77	4·07	87·5	4·0	—	—	—	Blackburn
94·2	0·84	4·39	85·2	4·4	—	—	—	Bolton
95·3	0·62	3·64	77·4	10·8	—	—	—	Burnley
94·5	0·64	4·24	83·6	5·7	—	—	—	Bury
80·6	3·70	12·84	62·6	6·1	—	—	—	Liverpool
89·1	1·73	7·45	68·2	7·2	—	—	—	Manchester and Salford
94·9	0·56	4·01	76·9	12·1	—	—	—	Oldham
94·2	0·75	4·40	86·6	3·8	—	—	—	Preston
95·2	0·61	3·70	81·7	7·9	—	—	—	Rochdale
90·1	1·09	8·49	79·8	3·6	—	—	—	St. Helens
98·7	0·32	0·58	77·2	13·3	74·2	15·3	10·5	Leicestershire
98·2	0·43	0·78	74·6	13·8	—	—	—	Leicester
98·8	0·26	0·41	82·2	10·0	71·9	17·1	11·0	Lincolnshire
93·3	1·34	2·10	60·8	12·0	73·2	16·3	10·5	Middlesex
93·8	1·30	2·12	69·7	7·5	—	—	—	London (Metrop.)
96 5	0·32	2·47	65·9	18·9	71·7	17·5	10·8	Monmouthshire
99·2	0·23	0·23	88·0	5·3	70·5	5·9	23·6	Norfolk
98·7	0·37	0·38	87·9	3·9	—	—	—	Norwich
98·9	0·26	0·39	75·9	13·7	69·3	12·8	17·9	Northamptonshire
98·1	0·35	0·85	74·9	10·4	—	—	—	Northampton
90·7	5·39	2·88	73·6	9·8	74·8	17·4	7·8	Northumberland
89·1	5·56	4·11	78·2	4·8	—	—	—	Newcastle & Gateshead

Table Illustrative of Migration

Counties and Towns.	Population, 1881.	Natives of Counties, 1881.	Increase or Decrease, 1871-81.		Females to every 100 Males.		
			Of Population.	Of Natives.	Among Total Population.	Among Natives.	Among Native County Element.
			Per cnt.	Per cnt.			
Nottinghamshire ...	391,815	381,226	22·6	14·5	105	102	103
Nottingham	186,575	—	34·2	—	113	—	111
Oxfordshire	179,559	222,867	0·9	6·7	104	106	97
Rutland	21,434	28,606	− 2·9	2·3	99	102	91
Shropshire	248,014	313,531	− 0·1	4·4	100	105	97
Somersetshire.....	469,109	550,500	1·2	3·4	113	110	107
Bath	51,814	—	− 1·4	—	147	—	127
Staffordshire	981,013	977,353	14·3	19·2	97	103	101
Rural	790,157	—	—	—	99	—	100
Wolverhampton....	75,766	—	10·9	—	100	—	102
Walsall	58,795	—	19·9	—	100	—	102
West Bromwich....	56,295	—	17·8	—	99	—	100
Suffolk.....	356,893	445,785	2·3	5·0	104	105	101
Ipswich	50,546	—	17·7	—	113	—	114
Surrey	1,436,899	996,655	31·5	30·9	110	108	104
Croydon	78,953	—	41·8	—	124	—	110
Sussex	490,505	464,409	17·5	11·8	111	105	101
Brighton.....	107,546	—	16·3	—	128	—	116
Warwickshire.....	737,339	696,710	16·2	18·7	107	105	104
Birmingham (with Aston Manor)	454,616	—	20·4	—	106	—	105
Westmoreland	64,191	77,759	− 1·3	7·2	104	102	99
Wiltshire.....	258,965	329,908	0·7	3·3	102	106	99
Worcestershire	380,283	393,847	12·2	11·8	106	105	103
Yorkshire	2,886,544	2,684,925	18·5	17·1	103	104	104·5
Rural	1,744,240	—	16·9	—	102	—	103
Bradford.....	183,032	—	24·4	—	115	—	113
Halifax	73,630	—	12·4	—	113	—	111
Huddersfield	81,841	—	15·1	—	110	—	109
Hull.....	154,240	—	26·5	—	104	—	107
Leeds	309,119	—	19·3	—	106	—	108
Middlesbrough ..	55,934	—	40·2	—	92	—	99
Sheffield	284,508	—	18·6	—	101	—	105
WALES.							
Anglesey.....	51,416	61,722	− 0·1	1·9	104	106·4	107·0
Brecknock	57,746	66,197	− 3·6	5·0	99	101·7	101·6
Cardigan.....	70,270	87,063	− 4·4	2·0	122	112	124
Carmarthen	124,864	149,235	7·9	5·9	109	106	110
Carnarvon	119,349	113,241	12·3	11·0	103	107	104
Denbigh	111,740	120,986	3·6	6·1	98	102	96
Flint	80,587	88,495	5·3	7·6	99	102	95
Glamorgan	511,433	375,153	28·6	20·2	95	104	103
Rural	362,975	—	25·7	—	93	—	101
Swansea	65,597	—	26·8	—	104	—	112
Cardiff.....	82,761	—	44·1	—	95	—	107
Merioneth	52,038	51,125	17·6	11·2	98	102	99
Montgomery	65,718	81,828	− 2·7	2·8	99	103	98
Pembroke	91,824	112,238	− 0·2	3·4	112	112	117
Radnor	23,528	33,744	− 7·4	0·9	97	100	95
England and Wales..	25,974,439	24,855,322*	14·4	14·6	105	106	104

* Inclusive of 108,596 persons, the county of whose birth is not known.

in the United Kingdom—Contd.

Birthplaces, 1881.			Native County Element.	Border Element.	Distribution of Natives of each County, 1881.			Counties and Towns.
England and Wales.	Scotland.	Ireland.			In County where Born.	Border Counties.	Elsewhere in same Kingdom.	
Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	
98·5	0·35	0·58	72·5	15·9	74·5	16·4	9·1	Nottinghamshire
97·8	0·44	0·82	70·8	15·1	—	—	—	Nottingham
98·8	0·32	0·31	74·9	13·5	59·7	14·8	25·5	Oxfordshire
98·7	0·44	0·40	67·6	18·7	50·5	24·7	24·8	Rutland
98·6	0·33	0·75	78·3	12·5	65·2	15·1	19·7	Shropshire
98·4	0·27	0·48	77·2	13·4	65·9	11·4	22·7	Somersetshire
95·7	0·58	1·28	62·6	17·2	—	—	—	Bath
98·0	0·34	1·33	72·9	13·6	77·2	10·4	12·4	Staffordshire
98·1	0·32	1·23	77·7	13·8	—	—	—	Rural
96·8	0·51	2·25	72·9	14·3	—	—	—	Wolverhampton
97·1	0·45	2·13	77·9	10·6	—	—	—	Walsall
98·9	0·19	0·66	76·3	13·1	—	—	—	West Bromwich
99·0	0·27	0·27	83·2	9·1	66·9	9·2	23·9	Suffolk
98·3	0·56	0·48	80·0	8·2	—	—	—	Ipswich
95·8	0·96	1·51	51·0	26·8	73·5	21·0	5·6	Surrey
95·5	0·95	1·28	45·7	30·7	—	—	—	Croydon
97·1	0·56	0·73	69·7	10·8	73·7	14·8	11·5	Sussex
96·0	0·76	1·06	64·0	9·6	—	—	—	Brighton
97·6	0·39	1·31	70·3	15·8	74·4	12·6	13·0	Warwickshire
97·2	0·41	1·64	68·1	16·8	—	—	—	Birmingham (with Aston Manor)
97·4	1·63	0·58	73·4	19·6	60·5	33·3	6·2	Westmoreland
99·0	0·21	0·30	79·4	11·9	62·3	15·9	21·8	Wiltshire
98·7	0·31	0·59	69·1	21·3	66·8	21·1	12·1	Worcestershire
96·8	0·67	1·97	81·7	7·4	87·8	7·9	4·2	Yorkshire
97·7	0·53	1·39	72·5	6·6	—	—	—	Rural
94·0	0·81	4·29	80·9	5·8	—	—	—	Bradford
95·3	0·63	3·52	83·8	5·3	—	—	—	Halifax
97·1	0·69	1·73	88·4	4·4	—	—	—	Huddersfield
95·1	1·17	1·60	73·3	11·6	—	—	—	Hull
95·0	0·86	3·09	82·7	5·0	—	—	—	Leeds
89·5	2·20	6·58	54·8	17·1	—	—	—	Middlesbrough
97·0	0·56	1·76	74·8	13·1	—	—	—	Sheffield
								WALES.
98·4	0·29	0·83	86·2	4·3	71·8	11·8	16·4	Anglesey
98·5	0·35	0·77	68·2	22·2	59·4	32·4	8·2	Brecknock
99·5	0·15	0·15	89·8	5·6	72·5	8·1	19·4	Cardigan
99·3	0·19	0·29	85·3	10·2	71·4	23·1	5·5	Carmarthen
98·6	0·37	0·52	79·1	11·5	83·3	6·9	9·7	Carnarvon
98·3	0·49	0·87	73·5	16·4	68·3	17·5	14·2	Denbigh
97·2	0·49	1·73	71·5	10·3	62·1	12·9	22·0	Flint
96·3	0·39	2·34	65·6	12·5	88·1	4·7	7·2	Glamorgan
97·8	0·23	1·62	67·8	14·7	—	—	—	Rural
95·2	0·60	2·78	64·2	7·6	—	—	—	Swansea
90·6	0·94	5·14	48·6	6·8	—	—	—	Cardiff
99·1	0·21	0·26	75·1	17·1	76·4	13·5	10·1	Merioneth
99·2	0·29	0·30	82·6	9·8	66·5	14·6	18·9	Montgomery
98·0	0·33	1·08	84·6	4·4	69·2	4·5	25·3	Pembroke
99·4	0·18	0·20	77·0	16·4	53·4	25·4	21·2	Radnor
95·7	0·98	2·17	72·0	12·8	75·23†	12·42	12·35	England and Wales

† Or 74·75 per cent., inclusive of natives of England and Wales enumerated in Scotland and Ireland.

Table Illustrative of Migration

Counties and Towns.	Population, 1881.	Natives of Counties, 1881.	Increase or Decrease, 1871-81.		Females to every 100 Males.		
			Of Population.	Of Natives.	Among Total Population.	Among Natives.	Among Native County Element.
SCOTLAND.			Per cnt.	Per cnt.			
Aberdeenshire	269,047	272,130	9·2	11·2	109	110	109
Aberdeen	105,189	—	19·3	—	118	—	120
Argyll	80,761	92,431	1·4	− 4·0	102	114	103
Ayrshire	217,630	232,894	8·3	10·1	104	107	106
Ayr	20,987	—	16·9	—	110	—	129
Kilmarnock	25,844	—	9·0	—	105	—	108
Banff	59,783	73,453	1·5	7·3	111	110	112
Berwick	35,273	40,171	− 3·0	1·5	109	108	106
Bute	17,634	14,366	3·9	2·4	118	120	111
Caithness	39,859	45,893	− 2·8	2·0	111	115	113
Clackmannan	24,025	25,202	8·0	13·5	110	106	107
Dumbarton	78,182	56,252	28·0	15·9	102	105	101
Dumfriesshire	75,166	80,883	1·8	1·9	111	112	112
Dumfries	17,092	—	10·7	—	119	—	124
Edinburgh	388,836	276,574	18·5	16·6	112	110	109
Edinburgh (with Leith)	287,842	—	19·1	—	115	—	111
Elgin	45,108	46,306	1·2	6·6	111	111	110
Fife	172,131	189,074	7·0	6·9	113	110	112
Dunfermline	17,084	—	14·2	—	127	—	122
Forfar	268,653	227,191	11·0	14·1	122	113	116
Arbroath	21,785	—	8·0	—	127	—	125
Dundee	140,239	—	7·7	—	129	—	118
Haddington	38,510	44,434	1·9	3·7	105	104	99
Inverness-shire	86,389	99,841	2·5	0·7	106	114	111
Inverness	17,385	—	19·8	—	108	—	112
Kincardine	35,465	42,642	1·0	3·0	103	109	103
Kinross	7,330	9,237	− 7·4	− 0·01	115	110	122
Kirkcudbright	42,290	40,113	0·5	− 4·3	113	112	113
Lanark	942,206	667,335	19·7	25·3	101	106	105
Glasgow	511,415	—	8·0	—	106	—	109
Airdrie	13,363	—	− 0·9	—	101	—	103
Hamilton	18,517	—	61·0	—	96	—	101
Rural	414,213	—	37·1	—	94	—	104
Linlithgow	44,005	46,126	6·3	13·1	91	105	96
Nairn	8,847	9,076	5·6	1·6	110	111	108
Orkney	32,040	34,271	2·5	3·0	114	119	116
Peebles	13,688	14,272	12·1	3·8	109	105	101
Perthshire	130,282	148,835	1·4	− 1·0	110	111·3	111·4
Perth	28,980	—	13·2	—	115	—	120
Renfrew	225,611	186,598	15·4	15 1	128	109	107
Rural	103,259	—	15·0	—	112	—	110
Greenock	66,704	—	15·4	—	95	—	104
Paisley	55,638	—	15·3	—	119	—	112
Ross and Cromarty	79,967	91,777	− 3·3	0·02	112	111·8	112
Roxburgh	52,592	53,773	9·0	3·4	110	107·8	108
Hawick	16,184	—	35·4	—	110	—	104
Selkirk	26,346	16,448	34·0	42·1	110	103·3	103·7
Shetland	29,705	31,907	− 6·0	− 5·9	135	145	141
Stirlingshire	106,883	111,195	14·5	11·4	100	107	100
Stirling	16,012	—	12·1	—	108	—	110
Sutherland	22,376	26,743	− 3·9	− 3·2	108	113	112
Wigtown	38,448	42,169	− 0·4	1·8	113	113	115
Total	3,735,573	3,397,759	11·2	11·0	108	110	108

* Or 68·8 per cent. inclusive of natives of Scotland

in the United Kingdom—Contd.

Birthplaces, 1881.			Native County Element.	Border Element.	Distribution of Natives of each County, 1881.			Counties and Towns.
England and Wales.	Scotland.	Ireland.			In County where Born.	Border Counties.	Elsewhere in same Kingdom.	
Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	SCOTLAND.
1·28	97·8	0·38	84·8	9·2	83·8	8·5	7·7	Aberdeenshire
2·38	95·9	0·68	78·7	11·0	—	—	—	Aberdeen
1·31	96·7	1·55	72·6	11·6	63·4	12·9	23·7	Argyll
2·49	89·4	7·65	77·3	9·9	72·2	22·6	5·2	Ayrshire
3·43	89·4	6·08	71·9	11·0	—	—	—	Ayr
1·52	93·6	4·45	80·7	9·6	—	—	—	Kilmarnock
0·68	98·8	0·23	76·2	17·6	63·5	25·5	11·0	Banff
6·41	92·2	1·01	71·7	14·3	63·0	24·6	12·4	Berwick
1·81	93·9	3·60	53·3	8·3	60·9	10·5	28·6	Bute
0·63	98·9	0·17	88·0	6·0	76·2	2.6	21·2	Caithness
1·85	96·0	1·07	60·9	21·2	58·0	20·2	21·8	Clackmannan
2·07	86·2	11·02	44·7	30·8	60·2	32·9	6·9	Dumbarton
5·04	93·1	1·31	74·9	11·9	71·8	20·0	8·2	Dumfriesshire
6·48	88·9	3·72	53·9	28·5	—	—	—	Dumfries
4·67	89·7	3·80	56·8	13·0	79·8	11·9	8·3	Edinburgh
4·93	89·5	3·08	55·9	11·2	—	—	—	Edinburgh (with Leith)
1·21	97·9	0·31	69·7	17·4	68·0	9·8	22·2	Elgin
1·56	96·8	0·86	81·1	6·9	73·8	8·4	17·8	Fife
0·92	97·3	1·53	94·9	6·7	—	—	—	Dunfermline
1·71	93·0	4·62	71·6	15·0	84·7	7·5	7·8	Forfar
1·62	96·6	1·25	84·4	7·8	—	—	—	Arbroath
2·04	89·0	8·16	66·0	16·2	—	—	—	Dundee
2·94	92·9	3·70	68·2	12·6	59·2	27·6	13·2	Haddington
1·24	97·8	0·41	79·4	13·6	69·0	15·4	15·6	Inverness-shire
2·77	95·3	0·88	62·1	24·9	—	—	—	Inverness
1·11	98·2	0·29	68·7	23·8	57·3	32·8	9·9	Kincardine
0·87	98·4	0·40	52·2	34·1	41·4	28·3	30·3	Kinross
4·17	93·3	2·02	68·6	19·4	72·4	17·9	9·7	Kirkcudbright
3·00	84·0	12·21	59·7	15·1	84·3	11·9	3·8	Lanark
3·14	82·8	13·12	61·3	11·1	—	—	—	Glasgow
1·14	88·3	10·17	72·9	10·9	—	—	—	Airdrie
3·10	88·8	7·41	72·4	11·2	—	—	—	Hamilton
2·93	85·0	11·16	60·4	20·4	—	—	—	Rural
2·49	89·4	7·65	56·5	25·1	53·8	39·2	7·0	Linlithgow
1·21	98·0	0·26	57·6	24·6	56·3	22·7	21·0	Nairn
0·63	98·9	0·15	92·8	2·3	86·6	1·8	12·3	Orkney
2·09	95·5	1·99	49·0	29·8	46·9	42·7	10·4	Peebles
1·80	96·0	1·63	70·6	16·5	61·8	22·2	16·0	Perthshire
2·93	93·4	2·93	70·1	12·7	—	—	—	Perth
2·17	83·6	13·49	56·8	19·0	68·7	26·7	4·6	Renfrew
1·80	83·2	14·30	51·3	23·5	—	—	—	Rural
3·14	79·5	16·07	55·1	17·8	—	—	—	Greenock
1·53	89·0	8·98	69·0	14·7	—	—	—	Paisley
0·69	98·9	0·18	88·4	9·4	76·5	8·4	15·1	Ross and Cromarty
5·71	92·3	1·57	68·8	16·5	67·3	24·4	8·3	Roxburgh
5·73	91·8	2·22	70·1	13·9	—	—	—	Hawick
2·69	94·7	2·22	45·8	31·6	73·4	19·8	6·8	Selkirk
0·43	99·3	0·07	94·8	0·3	90·5	0·6	8·9	Shetland
1·48	93·9	4·17	63·8	19·1	61·3	28·1	10·6	Stirlingshire
2·83	91·3	4·87	59·9	21·9	—	—	—	Stirling
0·72	98·9	0·16	83·5	7·8	70·1	12·5	17·4	Sutherland
2·37	91·0	6·11	78·3	7·3	72·2	4·9	22·9	Wigtown
2·46	91·0	5·86	68·8	14·2	74·4*	15·6	10·0	Total

enumerated in England and Wales and in Ireland.

Table Illustrative of Migration

Counties and Towns.	Population, 1881.	Natives of Counties, 1881.	Increase or Decrease, 1871-81. Of Population.	Of Natives.	Females to every 100 Males. Among Total Population.	Among Natives.	Among Native County Element.
IRELAND.			Per cnt.	Per cnt.			
Antrim	421,943	355,216	− 4·4	− 1·7	114	111·6	112·1
Belfast (Union)	239,283	—	18·1	—	119	—	—
Armagh	163,177	169,872	− 9·0	− 8·2	110	111	109
Carlow	46,568	52,862	− 9·8	− 7·8	101	102	98
Cavan	129,476	136,009	− 8·0	− 6·9	100	99·5	98·8
Clare	141,457	144,432	− 4·3	− 4·3	99	99	99
Cork, County	495,607	478,754	− 4·1	− 4·0	101	104·7	104·8
Cork	80,115	—	1·9	—	113	—	114
Donegal	206,035	211,862	− 5·6	− 5·0	105	107	104
Down	272,107	287,310	− 7·3	− 1·0	112	113	111
Dublin, County	418,910	285,528	3·4	− 0·5	112	114·3	114·7
Dublin (City)	169,274	—	6·5	—	110	—	116
„ (Union)	345,245	—	3·5	—	110	—	116
Fermanagh	84,879	87,138	− 8·5	− 9·0	102	102	100
Galway	242,005	241,503	− 3·1	− 3·4	101	101·8	101·8
Kerry	201,039	201,494	2·3	1·2	98	100	99·8
Kildare	75,804	75,347	− 9·3	− 5·2	86	99	94
Kilkenny	99,531	104,082	− 9·0	− 8·3	103	105	104
King's County	72,852	71,749	− 4·0	− 4·3	96	99	96
Leitrim	90,372	92,107	− 5·4	− 5·3	100	100	99
Limerick, County	180,632	179,357	− 5·9	− 5·6	104	105·3	105·1
Limerick	38,555	—	− 2·0	—	111	—	112
Londonderry, County	164,991	159,450	− 5·1	− 6·1	108	106·3	105·5
Londonderry	58,400	—	− 0·6	—	77	—	103
Longford	61,009	61,990	− 5·4	− 4·6	98	98·6	97·6
Louth	77,684	75,721	− 7·5	− 8·3	103	106	105
Drogheda	12,297	—	− 8·9	—	116	—	115
Mayo	245,212	245,550	0·1	0·2	106	107	106
Meath	87,469	98,923	− 8·5	− 4·5	100	100	95
Monaghan	102,748	109,097	−10·6	−34·3	105	105	104
Queen's County	73,124	79,843	− 8·3	− 5·2	98	98·9	98·8
Roscommon	132,490	132,239	− 5·8	− 6·4	99	99	99
Sligo	111,578	110,509	− 3·4	−12·1	102	102·4	101·9
Tipperary	199,612	203,502	− 7·9	− 7·5	102	103	103
Tyrone	197,719	207,788	− 8·4	− 6·6	105	106	104
Waterford, County	112,769	108,737	− 8·6	− 7·9	106	108	107·6
Waterford	22,452	—	− 3·8	—	112	—	114
Westmeath	71,798	76,588	− 8·5	− 5·9	96	99	96
Wexford	123,854	132,508	− 6·6	− 6·1	103	105	96
Wicklow	70,386	88,223	−10·6	− 7·7	101	106	98
Ireland	5,174,836	5,062,287	− 4·9	4·6	104	105	104
United Kingdom	34,884,848	34,538,048	10·8	10·3	106	106	105

* Or 77·6 per cent. inclusive of natives of Ireland

in the United Kingdom—Contd.

Birthplaces, 1881.			Native County Element.	Border Element.	Distribution of Natives of each County, 1881.			Counties and Towns.
England and Wales.	Scotland.	Ireland.			In County where Born.	Border Counties.	Elsewhere in same Kingdom.	
Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	Per cnt.	IRELAND.
1·50	1·36	96·7	78·2	14·7	92·9	5·3	1·8	Antrim
2·69	2·30	94·4	78·6	9·4	—	—	—	Belfast (Union)
0·79	0·40	98·5	87·9	7·4	84·5	7·3	8·2	Armagh
0·53	0·13	99·1	86·0	9·9	75·8	9·1	15·1	Carlow
0·28	0·14	99·4	93·4	4·9	88·9	5·2	5·9	Cavan
0·43	0·07	99·3	95·1	2·5	93·2	4·2	2·6	Clare
2·09	0·26	97·1	92·7	2·4	95·2	1·9	2·9	Cork, County
3·59	0·52	94·8	87·2	—	—	—	—	Cork
0·37	0·36	99·0	95·6	2·1	92·4	5·1	2·5	Donegal
1·18	0·84	97·7	87·6	7·3	83·0	11·4	5·6	Down
4·56	1·10	93·2	61·9	10·8	90·8	2·5	6·7	Dublin, County
5·35	0·87	92·5	62·6	—	—	—	—	Dublin (City)
4·91	1·22	92·7	60·8	12·1	—	—	—	,, (Union)
0·55	0·31	98·9	89·5	6·7	87·2	6·9	5·8	Fermanagh
0·80	0·14	98·8	94·2	2·6	94·4	2·5	3·1	Galway
0·88	0·12	98·8	96·4	1·8	96·2	2·5	1·3	Kerry
5·49	0·64	93·2	75·1	11·1	75·8	20·8	3·4	Kildare
0·85	0·14	98·7	90·9	5·3	86·5	7·8	5·8	Kilkenny
1·26	0·29	98·0	83·8	9·6	85·2	7·4	7·4	King's County
0·30	0·14	99·4	93·4	4·7	91·7	5·6	2·7	Leitrim
1·30	0·16	98·2	89·1	7·2	89·8	6·5	3·7	Limerick, County
4·70	0·54	93·5	76·2	—	—	—	—	Limerick
0·76	0·82	98·0	87·6	8·5	90·6	7·2	2·2	Londonderry, Cnty.
1·66	1·45	96·3	60·9	15·4	—	—	—	Londonderry
0·97	0·15	98·6	90·8	5·1	89·4	4·4	6·2	Longford
1·28	0·25	98·1	84·5	9·3	86·6	5·1	8·3	Louth
1·20	0·35	98·0	85·0	—	—	—	—	Drogheda
0·59	0·13	99·1	96·3	1·7	96·1	2·2	1·7	Mayo
0·66	0·16	99·0	87·9	8·2	77·8	19·8	2·4	Meath
0·33	0·25	99·3	91·8	5·9	86·5	6·7	6·8	Monaghan
0·71	0·21	98·8	88·2	6·5	70·7	7·1	22·2	Queen's County
0·91	0·10	98·7	92·8	4·4	92·9	4·4	2·7	Roscommon
0·47	0·36	99·0	93·1	3·8	94·0	3·0	3·0	Sligo
1·18	0·14	98·3	89·8	6·5	88·1	7·2	4·7	Tipperary
0·33	0·35	99·1	91·8	6·6	88·6	9·0	2·4	Tyrone
1·22	0·17	98·2	87·3	8·2	90·6	6·1	3·3	Waterford, County
2·85	0·49	95·9	71·0	—	—	—	—	Waterford
1·02	0·14	98·4	87·83	6·14	82·4	5·6	12·0	Westmeath
0·80	0·10	98·9	93·44	2·81	87·4	3·9	8·7	Wexford
1·14	0·30	98·2	84·3	9·82	67·3	2·9	29·8	Wicklow
1·34	0·43	97·5	89·6	4·1	89·6*	4·2	6·2	Ireland
71·7	10·50	16·7	73·8	11·6	74·5	11·7	13·7	United Kingdom

enumerated in England and Wales and in Scotland.

Discussion *on* Mr. Ravenstein's Paper.

The President said he hoped that the accident of Mr. Ravenstein's not having been able to prepare a written paper in time to be printed with his tables, would not prevent members from entering upon a profitable discussion on the important subject which had been brought before them. Doubtless many had personal knowledge, not of the laws of migration but of the actual facts of migration in different parts of the kingdom, affecting as they did their criminal population, their increase of population, and also their social existence. The influx of the population from the agricultural into the urban and manufacturing districts was one of the immensely difficult problems of the present day, and was one which was not confined to England, but existed in France, in the United States, and was increasing in other countries throughout Europe. He hoped that the very pregnant and important matters placed before them would lead to a profitable discussion.

Dr. G. B. Longstaff said he had done a little work in the same direction as Mr. Ravenstein, though not in such an elaborate way. He held in his hands a map in which he had coloured the counties of England and Wales with three colours, according to the results obtained by comparing the actual increase in the ten years as shown by the census, with the natural increase recorded by the comparison of the registers of births and deaths. In every county there was a very considerable natural increase by excess of births over deaths, because the English death-rate is exceptionally low, and the birth-rate somewhat high; but owing to migration the actual increase of the different counties was very different from the natural increase; the counties fell into three categories, first there were those counties in which the population at the enumeration of 1881 was smaller than in 1871; these were very few in number, and had no towns of any considerable magnitude: they comprised Westmorland, Shropshire, Hereford, Dorset, Cornwall, Huntingdon, Cambridge, and Rutland. The only towns of any considerable size in those counties were Shrewsbury and Cambridge. Then at the other end of the scale there were those counties which had increased considerably more than the natural increase, mainly, the great seats of manufacture and mining, Durham, Yorkshire, Lancashire, Cheshire, Derby, Nottingham, Leicester, and the counties in the immediate neighbourhood of London, Essex, Middlesex, Kent, Surrey, and Sussex. The greater portion of England came into the third category, *i.e.*, counties in which the population had increased but not to such an extent as the natural increase would lead one to expect, owing to the fact that in all of them emigration had exceeded immigration. Mr. Ravenstein stated that people migrated not from one county direct to the centre of population, but moved from each county as it were into the

next, and so on, moving towards the centre, and he (Dr. Longstaff) should like to know whether he found in the peripheral counties that the native county element was very large. According to his theory they would for example expect to find that in Norfolk, Anglesea, Carnarvon, Pembrokeshire, and Cornwall, the people were almost entirely natives, because there was no place beyond from which migrants could come, since none of them contained seaports of any consequence. Speaking of Devonshire, he noticed that there was a very considerable migration of Devon people into Wales, and of Welsh people into Devon, so that the Severn was not by any means the barrier that it might be supposed to be. When his map showing the relation of migration to natural increase was compared with a map showing the density of the population, they would find practically, which of course was a fact generally known, that where the population was densest there was the tendency for it to increase most, and people mostly went from the thinly populated to the densest portions. It was an interesting problem to find out what was the real annual decennial migration from place to place. Take for instance the Germans in England: the census showed a greater number in 1881 than in 1871. According to the usual process of subtracting one from the other, the ordinary writer in a newspaper would tell them that so many thousand people had come into England from Germany in the ten years. But a little thought would show that the stream of migration must have been very much larger than that, because during the whole time there had been Germans dying in England at presumably the same rate as English people. Mr. Humphreys had suggested a way of ascertaining the real increase as follows: take as the average German born population the mean of the numbers enumerated in 1871 and 1881, and then assuming in place of any better facts that they died at the same rate as English people, they could get an approximation to the number of Germans that had died in England during the ten years; and as the population had increased, it was obvious the total migration consisted of a number equal to those who had died added to the enumerated excess. The migration of Irish was very large into this country, but seeing that the Irish population enumerated in 1881 was smaller than in 1871, the first idea that one might have would be that there had been no migration of the Irish. But if they allowed for the death-rate in the interval they would find that the migration was very considerable, although it was not sufficient to make up for the death-rate. He thought the law laid down by Mr. Ravenstein might be true for most completely settled countries, but it was not altogether true. If they looked at the facts of the United States, where of course the foreign element was a very large one, they would find that maps coloured to show the distribution of the foreign born of each nationality were quite different. An Irishman as long he remained in Ireland talked about nothing but the land; possession of land was his idea of bliss, and the land laws were the cause of all his misery; nevertheless in the United States and Canada they did not find the Irish population most dense where most land was to be had, but it was greatest in the great

cities of the Eastern States. It was not so with other peoples. If they took the Germans, they would find them going to the great wheat growing States, Minnesota, Dakota, and Wisconsin. There was no Scandinavian population in the Eastern States, but in Dakota and Minnesota they formed no less than 13 or 14 per cent. of the total inhabitants. The British population was more evenly distributed over the whole, but very naturally the largest proportion was in Upper Canada. So that it would be found if they went to other countries where conditions were very different, that there were other laws which would interfere altogether, and might even turn the tables completely upon Mr. Ravenstein's law and produce results quite different. He thought they ought to be very grateful for the interesting facts which Mr. Ravenstein had brought before them.

Mr. Noel A. Humphreys said the author had made some allusion to the extra-metropolitan parts of Middlesex. The small proportion of the enumerated population born in the extra-metropolitan districts was apt to be very deceptive. The growth of the population in extra-metropolitan Middlesex was larger than that in almost any other so-called registration county in England, and although the population born therein bore a very small proportion to the total number enumerated therein, that was not due to any strong tendency to migration, but rather to the overpowering numbers of those who had come over the borders of London and were born in other parts of Middlesex, thereby apparently reducing the proportion of the natives of that portion of the county. This must not be attributed, as Mr. Ravenstein rather appeared to do, to any unaccountable tendency in the natives of that county to migrate. There was one other point in which he thought Mr. Ravenstein was not sufficiently explicit. He had stated that the increase of the natives of Durham had been 32 per cent. in the ten years; but the information given was not sufficient in order to ascertain that very accurately, since the last census was the first occasion on which the natives of the county had been grouped together in the way to facilitate the inquiry which Mr. Ravenstein made. The enumerated natives of Durham in 1881, however, included all the children of the immigrants into the county since 1871. There was one very startling fact with regard to the county of Cornwall, viz., that the natural increase of population in that county during the last ten years was 32,000, and yet the recorded population had decreased 34,000; so that Cornwall actually contributed to the increase of other places to the extent of 64,000 in that period. The subject was one full of interest, and at the same time full of perplexity on account of the difficulty of localising the migrations in sufficiently small areas.

The President said he would take the opportunity of bringing before the members some very interesting information with regard to the non-progress of the population of France, touching upon this very question, which had been published in the March number of the "Journal of the Statistical Society of Paris," and had reached

him last Saturday. It was contained in a paper by M. Loua, the general secretary of the society, showing the changes of population in France chiefly in the last five years, and bringing prominently into notice the difference between what he called the natural and the artificial increase of the population, viz., the excess of births over deaths in each locality, and the increase independent of that change. Mr. Ravenstein's paper did not bear upon that subject, but it was a very important element in considering the question, and if they had the statistics complete with regard to births and deaths throughout the kingdom, which he believed to a certain extent they had, anyone who would undertake to make an abstract of them, would be able to compare for each part of the country how far the changes were due to the natural excess of births or deaths and how much to migration. He had hoped that perhaps Mr. Ravenstein might have touched upon that branch of the question, but his subject was large enough as it was; still it was one that might be usefully taken up by any gentleman interested in it, and would well repay him for his labour. Now with reference to France, we find there the population is almost stationary. M. Loua says, "You know already that since 1870 our population has scarcely increased, that is to say, the excess of births over deaths is less than 100,000 in the year; and that allowing for immigration of foreigners it is not more than 150,000." As the present population of France is 37 millions, you can understand the increase is 0·3 per cent. at the outside. So that it is really almost stationary. M. Loua goes on to say that "if you examine the details more closely, it will be shown that the greater part of our territory is becoming depopulated day by day, while certain more favoured regions increase incessantly, to the great detriment of the national equilibrium. This is a point which it is unnecessary for me to prove, because it is generally admitted." He then proceeds to show that, comparing the census of 1876 with that of 1881, in five years there had been an increase of 766,000 souls, and of these 561,000 were in the forty-seven principal cities; and 204,000 in the county districts. The population of these forty-seven large towns, which was about 12 millions, had increased little more than half-a-million (561,869), while that of the rural districts, being about 25 millions, had only increased about 200,000 (204,301). He then shows that among the city populations embracing those forty-seven principal towns, and containing 12 million inhabitants, the natural increase by excess of births over deaths in those five years was only 38,480, and the artificial increase by immigration was 1,080,000. The whole paper was well worthy of examination, showing as it did in the most striking way, first, that the population of France was almost stationary, and secondly, that the changes were derived entirely from the movement of the population from the country into the towns and from the introduction of foreigners. During the five years mentioned (1876-81), while the increase of the native-born French in France was about half-a-million, the increase of foreigners was about a quarter of a million; so that one-third of the total increase during that period consisted of foreigners. The total number of foreigners in 1881 was 1,001,090. Of these

432,256 were Belgians, chiefly settled in the departments of the Nord, the Seine, and the Ardennes. The Germans accounted for only 82,000; chiefly in the Seine, 35,954, and Meurthe and Moselle 12,000. Then came the Italians, who having been only 76,000 some twenty years ago, had now increased to 241,000. They were to be found chiefly in the Bouches du Rhône, the Alpes Maritimes, the Seine, and the Var. Spaniards accounted for 73,786, chiefly in the Basses Pyrénées and Pyrénées Orientales. The Swiss were 66,281, of whom 23,422 were in the Seine; and the English were 37,006, of whom 12,636 were in the Seine, 5,704 in the Pas-de-Calais, and 2,347 in the Alpes Maritimes. The facts adduced with regard to the migration from the country districts into the towns had a distinct bearing upon Mr. Ravenstein's paper, and gave him the opportunity of expressing the hope that that gentleman would carry out his intention of extending his inquiry to the several European countries, and show in a subsequent paper the migration from one country into the other that was there going on throughout the continent.

Rev. I. Doxsey said there were various commercial and political circumstances that seemed to affect the law of migration. Some years ago in Northamptonshire there was an objection on the part of the working classes to use machines, and when the masters found that they could not get on with their workpeople, the trade was to a very considerable extent driven out of Northampton and settled itself in Kettering, Wellingborough, Leicester, and other towns, causing a migration altogether unusual during the period of time in which the masters were contending with their workpeople. And later still with regard to the iron shipbuilding trade, it would be in their recollection that at one time there was a considerable shipbuilding trade on the Thames, but owing to the failure of a large shipbuilding company, a considerable district on the borders of that river was almost entirely deserted, and the shipbuilding trade took its flight principally to the Clyde. He suggested whether similar circumstances had not been operating during the last ten years in regard to the migration of population from the country places to the towns. It was well known that agriculture had been very seriously affected in two ways, partly because agriculturists found it desirable to lay down their farms in grass instead of tillage, which caused a considerable portion of the country population to seek refuge in the towns wherever they could find employment; and partly because a considerable number of farms had lain idle, and therefore labourers were necessarily driven away from the rural districts, from what Mr. Ravenstein had called the country portion of the counties, into the town population, and some of them to considerable distances in order that they might find work. He did not know how far Mr. Ravenstein had looked into that portion of the question, but it did seem to him that in ascertaining the causes of the migration of population during the last ten years they must necessarily take these considerations into account especially remembering the great changes that had taken place in agriculture.

Mr. Rowland Hamilton, while highly appreciating the value of the facts that Mr. Ravenstein had laid before them, felt he must take exception to the use that had been made of the word "law" in the discussion of them. The work of investigation had to be carried on by reversed processes, sometimes by working out from a law to its consequences, and sometimes by taking consequences, and drawing from them inferences which aided the discovery of "law," but did not in themselves constitute a "law;" much confusion arose by formulating a "law," and then explaining away its action, as if what was a law in one sense was not a law in another. A natural "law" worthy of the name could not admit of any exceptions. The conditions laid before them were but a portion of a very large and intricate question, and would constantly be modified by other facts. It seemed to him, as far as he had been able in the last ten or twelve years to watch some of the issues of this question, that there was within the small area of Great Britain what they might notice on a larger scale in historic times, viz., a very great difficulty in overcoming what might be called the *vis inertia*, especially in rural districts. The population would remain for a long time under circumstances of much hardship before some great necessity or opportunity induced them to face a change. When that was once made many joined a class moveable as compared with their former stationary class. In England at the present time there were trades which could migrate from one place to another with little difficulty, but when it came to taking up an entirely new occupation, it required a very much larger force to initiate the first change. Some twelve years ago, for example, there was a considerable demand in the northern mining countries, especially Durham, for labour, and employers sent far and wide to get it. They attracted a considerable number of agricultural labourers from Norfolk, and the result was curious, and by no means unsatisfactory. Some of those men came back again and said that the change was all a delusion, that they had to work harder and to spend a good deal of the enhanced wages in the food necessary for their support. Others of a more vigorous class, even when admitting this, preferred their new way of life, and to have the choice of spending their own money in their own way. Thus under new conditions a new division of population arose. Many of these considerations would come under Mr. Ravenstein's inquiry, and would throw a very great deal of light upon the curious mixture of imperturbability and modifiability which existed in the very mixed population of this country.

Mr. S. Bourne confessed to sharing with Mr. Hamilton the difficulty of recognising the use which Mr. Ravenstein made of the word "law." It did not appear to him from the result of the investigation that there was anything, strictly speaking, in the way of law to be discovered which regulated the migration of the population from one part of the country to another, unless it was the simple law of demand and supply. Very great light had been thrown upon some of the most difficult problems of the present day by the reference that the President had made to the statistics

of France. It did seem exceedingly strange that whilst France was not increasing at all in population, her rulers should be so thoroughly bent upon adding to her territory. It was well known that though France was not increasing in her own population, she was increasing very rapidly in her demand for food, proving that her population must be employed to a very much greater extent than before in manufacturing operations rather than agricultural. This had an important bearing upon the relation in which England stood with regard to France and the other countries of the world; and though he did not wish to introduce the question of protection or prohibition, or fair trade or free trade, yet there was a very great deal of information to be derived from the facts of the case as bearing upon these questions. They were often told that England was necessarily on the eve of a great change, because all other nations had adopted an opposite fiscal system to her own. Nothing could be more delusive than that, because the circumstances of the countries were very different. France, with her stationary population, her decaying agricultural employment, and her increasing manufacturing occupations, could not be governed by the same fiscal laws as this country, where they were increasing their population rapidly. It ought to be a great satisfaction to know that different circumstances prevailed in England to those existing in France. England possessed immense territories of fertile soil in which to plant her surplus population, and her resources were sufficient to meet the emergencies in which she might be placed. No doubt they could not lose sight of the fact that they were at present in a position of very great difficulty, though he would hardly say that it arose from a surplus population, because he was one of those who believed that whilst there was an acre of land capable of producing food, it was a misnomer to talk about surplus population at all, and that the wealth of the empire under proper economical conditions and proper legislation would be increased more and more by largely increasing its population rather than by retarding it. Any investigation as to the facts of migration, and the circumstances in which they were placed, must be extremely valuable as guiding decisions unquestionably of the very greatest moment. They were therefore worthy of the consideration of their statesmen and political economists to a much greater extent than had hitherto been given them, for it was upon the proper use of the information they had, and the proper embracing of the opportunities presented to them by their colonial empire, and by the conditions in which they were placed, that the future prosperity of the country was to be determined.

Mr. Ravenstein, in reply, said he had been asked by Dr. Longstaff whether there were any facts to show that migration did not take place for long distances. There certainly were many such migrants, but as a rule migrants merely went to neighbouring parishes or counties, and a careful consideration of the facts showed that London, and other towns where there was a demand for labour, were only approached by degrees. He thoroughly agreed with

Mr. Humphreys that the census lacked information on certain points, and should like to see sub-registrars' districts more equal in size. Perhaps the new parliamentary divisions might be adopted as the future standard, instead of this incomprehensible mass of districts, parishes, counties, and registration counties, which were no counties at all. At the same time the census returns for many years back enabled them to say that so many natives of a certain county lived in England, and to determine the increase which had taken place among them. This increase in several instances was so considerable, that he should have hesitated to accept it had it not been confirmed by successive censuses. He had incidentally referred to certain disturbing influences which tended to obscure the general law of migration. There was no doubt that in many cases the sending of a garrison into a town, or the removal of prisoners or of school children, would affect very materially the constituent elements of the population of a town; but if they separated this floating or flitting element from the settled population, they would find these towns return to allegiance to what he believed to be the process of migration. He was able to say that whether we took the census for 1861, 1871, or 1881, the results would still be the same. The greatest element of disturbance was the number of Irishmen in certain towns; he did not say this offensively, he merely meant that the number of Irishmen in Liverpool, for instance, was so large as to depress the native county element. In large towns, however, this element of disturbance was not of much weight. If they had information about smaller places, these elements of disturbance would no doubt become very prominent features in a good many instances. He had intended to introduce an inquiry into the migration in foreign countries with this paper, but he found that the subject was too large. He had, however, looked into the matter, and if, for instance, in the case of the United States they eliminated the foreign-born element, and confined themselves to the native-born Americans, they would find that they too moved about from place to place as in the case of England; that some States overflowed, whilst others were being inundated; that people moved by degrees to the west, and that the natives of the outlying parts of New York State flowed into New York city just as the people of the metropolitan counties moved into London. He had hesitated before he made use of the term "law," and merely did so because he could find no other term. All he meant to convey was that migration went on according to certain rules. They spoke of laws of population, notwithstanding that these laws might be interfered with at any moment, and, as Mr. Bourne had shown, were really being interfered with in different countries.

A cordial vote of thanks was accorded to Mr. Ravenstein, and the proceedings terminated.

Indian Railways *and* Indian Wheat.

By Arthur Knatchbull Connell, Esq., M.A.

[Read before the Statistical Society, 19th May, 1885. The President, Sir Rawson W. Rawson, K.C.M.G., C.B., in the Chair.]

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Preface. The Public Works Policy, a Gigantic Scheme of State Interference.

Whenever any outsider is venturesome enough to criticise the economic effects of the policy pursued by the Indian Government during the last thirty years in its vigorous efforts to develop the resources of India, the official apologist always takes his stand on the one indisputable fact of the rapid increase of the foreign trade. In the five years before 1854, when the first railway was opened, the average yearly imports of merchandise were valued at 11 millions sterling, and the exports at 19 millions sterling; in the five years preceding 1884, when over 10,000 miles were open, the average yearly imports were over 53 millions sterling, and the exports over 67 millions sterling. If the critic is not silenced, or the official apologist wishes still further to reassure his fellow countrymen at home, and especially the influential mercantile bodies interested in the development of India, he has only to point to the fact that in 1850 India only took $4\frac{1}{2}$ millions sterling of cotton goods, whereas in 1884 she took about five times the amount; and that since the former date about 75 millions sterling have been spent in England on rails, carriages, iron work, and coals in order to equip India with the advantages of improved communications. Surely criticism may

now be set aside as mere pessimism. And indeed, so long as Indian products did not compete with English, so long as India seemed able to consume with infinite capacity English manufactures and minerals, everything appeared to work for the best. But when Indian wheat began to flood the English market, when the consumption of cotton goods seemed to be lessened, then it became necessary to consider the economic consequences of as gigantic a scheme of governmental interference as the world has ever seen. And at the present period of depression in trade, which is closely connected with over production in food of all kinds, and to some extent over exportation of food caused by rapidly constructed railways in the East and the West, it is of the utmost importance that the policy of the Indian Government should be examined in the light of general principles rather than of special interests, or, if special interests are to be considered, certainly the interests of the agricultural classes, whether in England or in India, are deserving of as much if not more consideration than those of the commercial classes concentrated in the iron and cotton districts of England. It is with the object of calling attention to certain too often ignored aspects of the Indian railway question that I have submitted this paper for discussion.

Indian Railways and Wheat Trade. Demand of Chambers of Commerce for Development of India.

For the last three years the Indian Government has been making every effort to induce English capitalists to come forward and undertake the construction of railways in India. It has issued rose-coloured reports showing that the lines already constructed pay 5·68 per cent., that the State has recently received as much as 1 million sterling in the shape of surplus profits during one year, that the foreign trade is rapidly increasing, that the wheat trade especially has largely expanded, in short that a wide field for profitable investments is open to the English public. The various Indian Chambers of Commerce, which are interested in stimulating the through traffic, have not been slow in taking up and accentuating the cry. Calcutta has called unto Bombay, and Bombay unto Madras, while the Anglo-Indian Press, with hardly any exception, has vehemently denounced the crass stupidity of the Home Authorities in not giving the Indian Government *carte blanche* to cover India with a network of railways.* The merchants of Bombay, a city long noted for its demands on the State, have especially distinguished themselves in the extravagance of the programme which they have put forward. Utterly contemptuous

* See evidence given before Indian Railway Committee by Messrs. Lord, Graham, Hardie, Bythell, Birkmyre, and others.

of the present annual outlay of from 3 to 4 millions sterling, they have recommended a magnificent expenditure of 200 million pounds during the next ten years. Pointing to the official estimates as to the total yield of wheat in India, they have confidently asserted that the consumption of wheat in India is not large, that the yield can be doubled, and that some millions of tons would be available for export if only "cheap communications" could be made so as to bring the surplus down to the ports. In the rush of their arithmetic, they have never paused to consider whether any other crops will have to be displaced by wheat,* whether the soil may not get exhausted from want of manure, and whether after all efforts have been made to increase the export of wheat, there may not be a sudden collapse, as in the case of cotton some years ago. If such considerations were ignored by men personally acquainted with Indian questions, it was not to be expected that English Chambers of Commerce should pay any attention to them. They have been content to accept the glad tidings with unquestioning faith. Liverpool has been inspired with the hope of fresh freights, Middlesborough of a keen demand for rails, and London of investments for cheap capital; while Manchester, which has lately been wondering why, in spite of the abolition of the cotton duties, the expansion of its trade is so long delayed, has looked forward to the coming of India's long foretold millenium when every Hindoo

* In the Punjab Administration Report for 1881-82, it was stated that with the increase of the area under wheat, there was a decrease of that under barley and gram—the chief food of the poorer classes as far as the spring crops are concerned. In the North-West Provinces and Oudh, Mr. W. C. Benett, director of the Agricultural Department, estimates the increase of the area under wheat during the last five years as about equal to the total increase of cultivated land, or 855,704 against 932,085 acres. This would appear to be all gain available for export purposes, but it is to be remembered that the population must have increased, while the loss of waste land must have necessitated a larger consumption of green fodder crops and grain by the cattle.

There is much misconception as to the amount of wheat consumed in India. I believe that about one-twelfth of the population of India lives on wheat. Moreover, in the wheat districts the price of the coarser grains is directly affected by the wheat exports, as may be seen below in the price list for the Punjab. In two of the best settlement reports of the North-West Provinces, those of the Bareilly and Azimgarh districts, referring to the years 1865-75, it is pointed out that wheat was at that time largely eaten by the peasantry, and that the export of wheat was raising its price and increasing the consumption of millet. In fact in Northern India a simple comparison of the population and of the area of cultivation under the coarser grains is sufficient to show that the winter harvest must supply a very large amount of food. In some districts the millet, wheat, and barley crops are grown in rotation. In the Punjab in 1880 the population was about 18½ millions, and the area under autumn food crops 9,610,166 acres, which at an average yield of 10 bushels, could hardly support more than 10 millions with their cattle. The spring food crop area was 10¼ million acres, about one-third under barley and gram, and about two-thirds under wheat, the two former crops supporting with cattle possibly 4 millions.

and Mahomedan will swathe his body in twenty yards of Lancashire cotton.

The Economic Effects of such Development.

And so at last, it has been said, the great panacea for India's poverty has been discovered. It is not the inelasticity of land revenue system; it is not the weight of the salt tax; it is not the drain of home remittances to the amount of 30 million pounds a-year, for pensions, railway dividends, trade profits, &c.; it is not the decay of indigenous industries; it is not the destruction of forests by the railways;* it is not the enervating influence of bureaucratic† interference; it is none of these things that reduce the peasantry to such a state of impoverishment that they find it difficult to stand a season of drought. No, the reason why they suffer is that the soil is so fertile that the produce is wasted; that the people are so wanting in skill, thrift, and foresight that they never think of storing grain; that they are impoverished by the want of sale for their productions; in short that they periodically starve because they have as a rule too much food for themselves and their cattle. The inference is therefore drawn that as they cannot help themselves, the State must come to the rescue; that in a country where the mass of the people are engaged in agriculture, where population reaches in many districts a density of 500 persons to the square mile, where farms range from 5 to 3 acres in crowded districts, and never exceed 20 to 25 acres in thinly populated parts, the most effectual and economical remedy against famine is not that taxation should be so carefully adjusted that each

* A perusal of the recently issued Appendix III of the Famine Commissions Report (pp. 505—526), and of Dr. E. Balfour's Memorandum in Appendix I, pp. 99—108, shows that the demand for railway fuel has denuded the forests throughout India. In Bombay and Madras especially there is the strongest reason for thinking that the famine area has been increased by this reckless destruction of rain-attracting woods. In old days the fuel preserves used to be carefully protected by the village headmen, but their authority is now superseded by that of the Forest Department, which, not content with the preservation of forests in the interests of the community, is trying to make a revenue for the State. The Bombay Press has of late years protested against the injustice of the confiscation of village rights of fuel. The revenue of this Department has increased from 514,664*l.* in 1872, to 1,009,900*l.* in 1884; and its expenditure from 359,451*l.* to 685,000*l.*

† In the Financial Statement of March, 1884, Sir Auckland Colvin remarks :—

"The Government of India, in its character of railway constructor, and in its "control of various industrial or commercial operations, undertakes large, varied, "and expensive enterprises which, although for the most part highly remunerative, "necessarily add to the sum total of its expenditure. It constructs railways and "telegraphs, conserves or creates forests, makes and excavates salt, provides "savings banks, digs canals and tanks, organises and controls mechanical work-"shops and foundries, prospects for coal, furnishes funds for agricultural or "industrial experiments, and subscribes to economical exhibitions. It holds a "large opium monopoly, the cost of which varies with the seasons."

family may be able to provide its own famine insurance fund in the shape of stored grain, but that it may, on payment of further taxes, have access to a far distant market, and having thereby possibly secured a few more rupees, may be able to buy grain at famine prices.

And in order that the whole economic condition of India may be still further revolutionised, and millions of ryots may enjoy the enormous advantage of selling their produce in the foreign instead of the home market, it is supposed to be necessary to add many millions to the foreign debt of India, and to build many thousands of miles of railway. India, it is argued, must at all hazards compete with America in supplying the European corn market, or else she must be content to be decimated by famine; she must export food, or she will have nothing to eat. Freights and cost of production have been reduced to the lowest possible scale, and therefore if the wheat trade is to be further stimulated—and further stimulated it must be—it is on the reduction of the cost of carriage to the seaboard that every effort must be concentrated. As it does not appear that private enterprise is willing to undertake the risk, in spite of all the plausible assertions as to the remunerative character of the lines already constructed, the Indian Government has been urged to give a guarantee on at least 10 million pounds a-year, and we have the curious spectacle of devout believers in the virtues of free trade, preaching the exploded doctrines of protection under the guise of a bounty—for this is what a guarantee amounts to—on the carriage of wheat.*

Contrast between India, America, and England as to Railways.

Is America, it is indignantly asked, to have 120,000 miles of railway for a population of 50 millions, and India, with a population of 250 millions, to have only 10,000 miles? Is America to have "Mogul engines that fairly fly with a train load of 20,000 "bushels," and India to have only bullock carts that crawl at two to three miles an hour with a half-ton load? Is America to have the markets of the world open to her, and India to be content with feeding her own teeming population? Is the United Kingdom, with a population of only 35 millions, to be allowed to move 752 millions by its railways, and India, with 250 millions, to move only 50 millions? Are 256 million tons of goods to be carried in the United Kingdom and only 11 million tons in a country as large as Europe *minus* Russia? Such questions can only be answered by putting some other questions, which seem never to have occurred

* See article by Mr. W. Fowler, M.P., in "Nineteenth Century," February, 1884.

to those who are so confident of the true reply to their indignant interrogatives? Does a country with a dense population have a greater or less exportable surplus than a country with a sparse population? Does a long-worked soil require more or less care than a virgin soil? Is railway construction by private enterprise at its own risk in a free country, the same thing as railway construction by the State at the risk of the tax-payer in a conquered country? Are the economic results of railways constructed out of foreign capital,* supplied with foreign materials and worked to a great extent by a foreign agency, the same as those of railways constructed by native savings, supplied with home-made rails, &c., and worked by native agency? Lastly, what is the effect on the enterprise, industry, and intelligence of a country, when the old carrying trade conducted by the natives themselves along the chief routes,† whether roads or rivers, is superseded by the new carrying trade conducted by the agents of an alien government, when the profits are not left to fructify at home, but are distributed abroad, and in short an enormous business is carried on with but little monetary or mental co-operation on the part of the country itself? It is in asking such questions as these that we see clearly the fallaciousness of any comparison of English and Indian railways which ignores the difference between the conditions of the two countries. In England it was the utilisation of mineral wealth for manufacturing purposes, the expansion of foreign trade after the great war, and the consequent increase of national prosperity that at once stimulated and satisfied the demand for more rapid locomotion. In India, on the other hand, the absence, except in a few districts, of mineral wealth such as could lead to large manufactures, the existence of great rivers as means of communication, the

* Out of the capital spent since 1850 on Indian railways, about 58 millions have been spent in England and 77 millions in India, while the remittances to England for interest, on guaranteed and State lines amount to about 110 millions. Although the wage fund of India was at first augmented, since 1872 it has been steadily drained away. Half of the gross earnings of the railways is remitted to England for interest, and of the working expenses a large portion is paid to English *employés*, ironmasters, miners, and carriage makers. These economic facts are generally ignored. See Appendix I, Tables D and E.

† The recently issued Bluebook, Appendix III of the Famine Commissions Report, shows very clearly (pp. 464—96) that the native carriers by road and river are severely handicapped by the State-aided railways; in fact the boatmen on the Punjab rivers, the Jumna, the Chambal, the Ganges, the Gogra, the Gumti, and the Bhagirathi, have been driven from their trade by the "protected" carriers by rail. The railways give employment to over 180,000 natives, but the profits of the carrying trade leave the country. How many boatmen and carriers of all kind have been displaced it is difficult to say. In India there has not been, as in England, a great development of new industries to take the place of old ones. The disturbance is wholly artificial and not self-adjusting. Tea plantations, mills, and railway together employ about 500,000 persons, to be set against the workers in old industries, who filled up their spare time with subsidiary work.

density of the agricultural population, especially in the most fertile districts, and its self sufficiency as far as all the necessaries of life were concerned, whether grain, wool, cotton, and salt, made a more rapid means of locomotion a luxury, not a necessity, and a luxury with which *ex hypothesi* it was impossible for India to provide itself by its own efforts and out of its own resources. Hence the luxury has proved a most costly one. Expensive *matériel* and highly-paid *personnel* alike have had to be imported, while in order to pay the required interest on the foreign capital which has had to be borrowed, India has had to export, not the produce of vast prairies, with their virgin soil worked by machinery on commercial principles, but the surplus stores of tiny farms, the majority of which have been for centuries under the plough, and worked by petty cultivators for their own subsistence. America, Canada, and the Colonies, looking forward to a splendid harvest in the future, may be justified in mortgaging their estate, but to what undeveloped resources can India point? Her mineral wealth is very small, and her agricultural produce only increases *pari passu* with the growth of her population. Under such circumstances it is difficult to see the wisdom of adding to the burden of debt already caused by railway construction.

The Financial Results of Railways to the Indian Taxpayer.

How heavy that burden has been will be easily seen from the following figures, taken from the latest official returns presented to the Parliamentary Committee on Indian Railways:—

TABLE I.—*Indian Railways*, 1883-84.

Railways.	Capital.	Net Receipts.	Charges.	Loss or Gain to the State.	Loss by Exchange.
	£	£	£	£	£
1. Guaranteed	70,076,878	3,365,000	3,931,400	− 566,400	
2. East Indian	38,915,145	2,984,700	1,706,100	+1,278,600	
3. Subsidized	About 4,500,000	—	97,600	− 97,600	
4. South Mahratta	under construction	—	86,000	− 86,000	About 1,200,000
5. State—					
a. Productive	33,773,108	1,396,300	1,321,000	+ 75,000	
b. Non-productive	1,814,949	4,000	—	4,000	
c. Frontier	4,112,147	included in 5*a*	—	—	
d. Protective	1,111 350	—	—	—	
	—	—	—	+ 603,900	− 1,200,000
		Total loss to the State			£596,100

TABLE II.—*Net Charge to the State since* 1848-49, *including Purchase of Land, Supervision, and Loss by Exchange and Interest Charges.*

Railways.	Loss.	Gain.	Total Loss.
	Rupees.	Rupees.	Rupees.
1. Guaranteed	39,93,83,767	—	35,04,18,221
2. East Indian since 1880	—	4,89,65,546	
3. State	5,55,95,985	—	5,55,95,985
4. South Mahratta	21,20,268	—	21,20,268
5. Subsidized	25,07,855	—	25,07,855
	—	—	41,06,42,329*

* To this sum of 41 crores of rupees must be added a further sum of about 6,000,000*l.* sterling, which has been advanced out of State revenues for capital outlay on non-productive, protective, and frontier lines.

It will be observed that apart from any question of interest on the sums advanced by the State out of ordinary revenues for land, supervision and interest charges, the supposed surplus of 1883-84 is turned into a deficit by the fact of "loss by exchange" on the home remittances. In the Indian Budget this item is all lumped together in one sum, whereas it ought properly to be apportioned to the various items of expenditure in England. If this were done, it would be seen that about two-fifths of the loss by exchange is directly caused by the railway account, and is due to the fact that the capital of the guaranteed lines, and part of the capital of the State lines has been raised in England, and sterling remittances have to be paid by a depreciated silver currency.

Nor is this all. It was distinctly shown by Mr. Goschen's Silver Committee of 1876, that the direct cause of the increased loss by exchange is to be found in the gradual increase in the home charges, and the absence of any set-off to the Secretary of State's drafts on India, which set-off had up to about 1872 been supplied during a series of years by the capital of the guaranteed companies paid into the India Office Treasury (see Paper on Indian Public Works Finance, by Mr. Martin Wood). As the increase of drafts is largely due to the increase of sterling debt, and that debt is closely connected with the Public Works policy, the factor of increasing loss by exchange ought to be set against increasing revenue from the railways in order to give a true balance-sheet.

The question of loss by exchange is so intimately bound up with the question of borrowing in England for Indian railways, that to ignore this factor in the accounts is to ignore that which is of the utmost importance, and nothing can be more misleading than for the Indian Government to place loss by exchange in the same category as a natural calamity. Any depreciation of the rupee

which might have resulted from the over production or demonetisation of silver would hardly have been felt if the home remittances had not swollen to their present magnitude. (See Appendix I.)

The Land Question and the Industrial Revolution of India.

It is clear then from the above tables that the railways so far from being a commercial success have entailed the very heavy burden of over 47 million pounds on the Indian taxpayer, which must be regarded as a serious set-off against the profits supposed to have accrued to him from the opening up of foreign markets. But considering that the great mass of cultivators in India have a running account with the money lender, that they get their seed, their cattle, and their rupees from the latter, and hand over to him a very large portion of their crops valued at the low field prices which prevail at harvest time, it is almost certain that the profits of foreign trade are reaped not by the agriculturist, who is the chief taxpayer, but by the middleman. [The increased imports of gold point to this fact.] And next to the native middlemen up country, the foreign railway investors, merchants, and ship owners receive each their share of profit from the opening up of the agricultural districts, while the Indian Government, after taxing the peasantry to pay for improved communications, raises a heavier land tax on the plea that the value of the land is increased by improvements which have been effected by the State. Thus we get the following vicious circle in the arguments which are adduced for further railway construction: taxation for railways and destruction of indigenous industries force the peasantry to sell more of their crops, the middlemen send off the grain by the railways, the railway investors receive large profits, and the peasantry have their land tax raised on account of the flourishing nature of the grain trade.

A typical illustration may be drawn from the Bombay Presidency, the Deccan districts of which have recently become somewhat notorious as the vile body of merciless experiments. There the theory of improved communications and high prices, justifying a heavier land tax, has been applied to such an extent that the peasantry in some districts live on the verge of starvation. Dr. Pollen, appointed in 1880 under the Deccan Ryot Relief Act as special judge for the districts of Poona, Satara, Ahmednagar, and Sholapur in the Deccan, stated in a recent report that "in average years the ordinary Deccan ryot does not gain "enough from the produce of his fields to pay the Government "assessment and to support himself and family throughout the 'year, so that really no margin is left for the payment of his "debts." And not only in the Deccan proper, but in other parts

of the Bombay Presidency and Sindh, the land tax has been considerably raised* on the ground of higher value of crops; and if it had not been for the protests of district officers and the public Press, backed up by the strong remonstrances of the India Office, its incidence would have been far heavier than it is.

It was the knowledge of the disastrous consequence of such a policy that made Sir Louis Mallet pen the powerful minute which appears in the Famine Commissioners' Report: "Assessments," he wrote, in 1875, "have been raised 70 or 80 per cent. in one "stroke in conformity with certain artificial and arbitrary rules "often at variance with actual facts." And he went on to speak in the most emphatic language of the political danger arising from any further taxation of the land.

Nor was Lord Salisbury at all less caustic in the language which he employed when reviewing Sir Louis Mallet's minute. "So far "as it is possible to change the Indian fiscal system," he wrote (p. 144, Appendix I, Famine Report), "it is desirable that the "cultivator should pay a smaller proportion of the whole national "charge. It is not in itself a thrifty policy to draw the mass of "revenue from the rural districts, where capital is scarce, sparing "the towns where it is often redundant, and runs to waste in "luxury. The injury is exaggerated in the case of India, where "so much of the revenue is exported without a direct equivalent." He concluded by "discouraging attempts to take advantage of "inflated prices." The truth is that the test of higher prices is a most misleading one. In a country where *petite culture* is universal, the peasantry grow their grain crops primarily for subsistence, and only to a small extent for exchange, and it is only the small surplus that is over after the wants of themselves, their labourers, and their

* An instance was lately mentioned in a Bombay paper "of land yielding and "known to yield a crop whose whole value was Rs. 90, being assessed at Rs. 159, "because of proximity to market and of a tax of 4 annas an acre being imposed "in the Ratnagiri district on barren laterite rock." Although increased assessments are now said to be limited to 20 per cent., yet 60 per cent. enhancements are still sanctioned by Government. The most provident peasantry would be ruined by such exactions. It is urged in defence that the peasantry earn wages in Bombay and other towns and live upon them. But is it not obvious that all investment of capital in the land, especially in the shape of wells, is discouraged if the Government appropriates the profits? The old theory of Sir G. Wingate, that the State should take half the net receipts, is practically repudiated. According to evidence recently given before the Select Committee of the House of Commons, the Eastern Deccan Railway is leading to an increase in the land tax of 15 per cent. in one district, and 11 per cent. in another. Do not the ryots lose all the profits? The pamphlets of Sir W. Wedderburn, Mr. T. Hart-Davies, and Mr. Javerilal on the land revenue question in Bombay, give conclusive evidence as to the way in which the State grasps at every reason for enhancing its income. The Bombay Administration Report, 1883-84, just issued, shows that one year of prosperity was made use of to lay a burden of 33 per cent. increased assessment for the next thirty years on 7,860 villages in seven districts of the Presidency.

cattle are satisfied, that is at all affected by higher prices, and the largest part, if not all of that surplus goes to the money lender. Hence assessments which are made on the theory of the increased value of the total outturn must constitute a crushing burden. Indeed, if high prices are to be taken as the test of higher value, then the land ought to be regarded as most valuable in a year of famine, and a desert with a few ears of corn ought to pay a heavier land tax than a garden with every variety of crop.

Moreover it is forgotten by those who rely on the opening-up-of-the-country theory, that one universal consequence is the destruction of home industries and the crowding of the people on the land. As farms get smaller in size a larger portion of the produce is required for home consumption, while the subsidiary wage fund* which was provided by various industrial pursuits gradually disappears except in the neighbourhood of the great centres of trade. If there is one fact brought out more strongly than any other by the Indian Census Returns of 1881, it is the close interdependence of the agricultural and industrial life of India where that life is allowed to follow its own instincts, and it is especially the lower classes of society roughly classed as the landless labourers, making together with their families about 40 millions or one sixth of the whole population of India (Dr. W. W. Hunter's "Indian Empire"), who feel the necessity for being able to eke out their farm wages by some trade or job work. During two-thirds of the year they are wanted for field work, but when that is over what are they to do? In old days there was the carrying trade, weaving, metal working, salt making, boat building, and the like, but where the railways have come with the help of a State guarantee, they have succeeded in destroying many local industries and the great carrying trade.† The poor Indian coolie, living from hand to

* Mr. J. K. Cross in his budget speech of 8th August, 1884, was guilty of the fallacy of arguing from the market price of the gross produce instead of from the field price of the net produce. The difference between the official assessors of the land tax and their non-official critics largely turns on this point. It is no use quoting the average assessment for the whole acreage of Bombay; it is the assessment of the poorer soils producing grain and not cotton that is criticised.

† See "Moral and Material Progress of India, 1881-82," p. 103, "The competition of Manchester has resulted in a general decline and deterioration of "Indian manufactures." P. 101, "Iron has been found in almost every district "of India, and has been in most parts of the country worked on a small scale with "charcoal by native agency. The increasing scarcity of fuel and the competition "with English iron has, in a large proportion of cases, taken the industry out of "native hands." The manufacture of salt in the interior, except at the Government mines, has been forbidden all over India. On the Indus and Upper Ganges boatbuilders cannot compete with the State aided railways. Native sea-going craft are now diminishing. The decay of the higher arts has been recently pointed out by Sir G. Birdwood. Although wages have risen in some of the large centres of trade, there is no evidence in the reports of district officers in Appendix III of

mouth on his own resources, finds it impossible to compete with the rich English capitalist backed up by the bounty on carriage provided from the purse of the Indian Government. He is told to be grateful for the boon of free trade, but he himself feels nothing but the curse of protectionism. He sees his income smaller, and he finds food dearer; and as to salt, he may not even scrape it together from the barren earth.*

Railways versus Storage of Grain as safeguard against Famine.

It is these landless labourers that constitute a growing difficulty and danger to the State. They can just manage to keep themselves alive in years of plenty, but directly a season of drought sets in, and their wage fund collapses, they are unable by any efforts of their own to find sustenance. Their richer neighbours have no longer the same amount of stores as in former days, the village headmen have not the same authority, and the State is forced to open relief works. Supplies have to be brought from a great distance, and the Government has to give wages for some useless taskwork.† Millions of pounds sterling are spent, heroic efforts are made by the various officers, and yet the people die by tens of thousands. The cry for more railways is then raised as a greater means of protection, but the truth is that the task of saving life on such a large scale is beyond the strength of any Government however benevolent, and if it attempted to still further enlarge the scope of its responsibilities by an extensive network of famine railways it is likely to find itself bankrupt. Such famine railways are *ex hypothesi* certain to prove a financial burden in good years, and yet by the artificial stimulus which they will give to the export

Famine Commission that the agricultural wage has risen. Where the labourer is paid in kind, he gets much the same as before for the same work; but the same cash payments, coupled with a rise in price of food, are really a reduction of wage.

* In the North-West Provinces since 1843, in Oudh since 1857, and in Bengal since 1860, the manufacture of salt has been entirely prohibited by Government. There are also restrictions on salt manufacture in Bombay and Madras. The Salt Commissioners' Report of 1856 proves that there are many saliferous districts in the interior, which used to be worked before the passing of strict salt laws. By the present salt regulations the Government gains a higher revenue than formerly, and the railway receipts are increased. It is no doubt difficult to work an excise system, but it is most important to utilise local supplies especially for cattle. At present they are forbidden. A maund of salt (82 lbs.) can be produced on the Bombay, Madras, and Orissa Coasts for about one penny to three half-pence. The salt tax is now two rupees a maund all over India. Within the last ten years it has been lowered in North India and raised in South India, but forty years ago it was just as low in the North-West Provinces, lower in the Punjab, and three-quarters of a rupee in Madras and Bombay.

† The last famine cost about 15 millions and yet 5 millions of persons died in spite of railways. In South India money which ought to have been spent on repair of old irrigation works, was hypothecated as a guarantee fund for railways. See Famine Commissioners' Report, Appendix V.

trade in grain, they will make the peasantry less able to feed themselves and their labourers in a year of drought. In fact they will be a standing notice that the State will provide food, and that no responsibility rests with private individuals. Population will therefore be increased beyond the means of subsistence in bad years.

This aspect of the question as a remedy for famine is so persistently ignored by the advocates of railways that it is necessary to call attention to the evidence of history. Thus the Chief Commissioner of the Central Provinces, in his report for the year 1870, wrote: "The enforced accumulations of previous years of "plenty became the salvation of this remote tract in time of "scarcity, and paradox as it appears at first sight, it is never- "theless true that those same natural obstacles which prevented "succour being sent to Chuttesgarh when famine came, had pre- "pared this region for the calamity by retaining its surplus "produce in its local granaries."

The same facts are found in the history of Mysore, as related in the Famine Report by Mr. C. A. Elliott. He points out (p. 8) that the country had suffered in former years from deficient rain fall, but that actual famine had been staved off by the consumption of "the surplus *ragi* (or millet) stored in under- "ground pits, from which it is withdrawn in times of scarcity, as "the grain will keep sound and good for forty or fifty years." Unfortunately the more rigorous system of collecting the land tax initiated by the English Administration depleted the province of its stores during the years 1875-76, and drove the ryots on the relief works.

If we go to Northern India, we are told by Mr. D. Ross in his "Land of the Five Rivers and Sindh" (p. 118), "in seasons "when there is little demand for grain it is stored in large pits "about 10 feet deep, lined and covered with mud plaster. Corn "may be kept in this way for twenty years. When opened and "exposed to the air for some time it is found quite wholesome and "fit for food." In short such local granaries, stocked by the people themselves, have been from time immemorial the recognised safeguard against starvation in countries liable to suffer from drought, and it is the depletion of such stores by war, taxation, or the exactions of absentee landlords* that has so greatly intensified the

* In the case of Behar and Central India, the increase of the area under indigo and opium has diminished the local supplies of food. Indigo does not pay the peasantry so well as rice, but in Behar they are at the mercy of the planter. The growth of opium in Central India is stimulated by official pressure. With two Governments making a revenue it is doubtful whether the peasant makes any profit. I may refer to the history of the Oudh famine of 1783, the Bengal famine of 1770, the Orissa famine of 1866, and other famines of this century in proof of my assertion as regards depletion of stores.

sufferings of the Indian peasantry in the great famines of this and last century. And if it be thought that such stores may be wasted, it may be pointed out that they form the very best kind of available capital in a densely populated country. They can be utilised for the employment of labourers of every kind, or for the cattle, or for trade, and for the latter purpose a slow means of communication all through the country whether by road or river is all that is necessary.

The Cultivation of Wheat in India.

The reply of the advocates for more railways to the above line of argument is that the producers are so greatly enriched by the increase of the export trade that they will be in a better position to face a year of drought. But any close inquiry into the conditions of agricultural life in India shows that, so far from the producer receiving a large profit from the wheat trade, he is, except under very favourable circumstances, barely repaid for the cost of cultivation. Being as a rule the serf of the middleman, he is forced to grow the crops which will best pay the latter even if he has not food enough for the support of himself and family. To make this point clear, let us take the figures of the wheat trade for 1881-82. According to the official estimates in the "Pioneer" of 2nd April, 1884, "The area under wheat cultivation in British territory is "reckoned at about 20 millions of acres, and the yield between "5½ and 6 millions of tons. The area in Native States would yield "an additional 6 millions of acres, with a yield of 1¼ millions of "tons. In British territory the Punjab leads the list with 7 million "acres; the North-West Provinces come next, with 6¼ millions; "then follow the Central Provinces, with 4 millions; Bombay, with "1½ millions; and Behar, with 850,000 acres. Of native States, "the Central India Agency and Rajputana Agency have 2½ millions "of acres a piece; Hyderabad, 3 millions. The average yield is "estimated at 10 bushels in the Punjab, 13 in the North-West, "9 in the Bombay Presidency, and 8 in the Central Provinces. "The average cost of production is estimated at 1*s.* per bushel, or "including rent at 1*s.* 6*d.** Taking 22½ seers (*i.e.*, 45 lbs.) as a "general price, we may convert this at 1*s.* 8*d.* the rupee into "18*s.* 6*d.* a quarter, which would mean 15*s.* or 16*s.* as the price "paid the producer. At these rates there would be a net profit of "8*s.* per acre if an outcome of 2 quarters or 15 bushels were

* According to the figures given in the Calcutta "Yellow Pamphlet" (p. 13), the cost of raising wheat at Bilaspoor in the central provinces is reckoned at 5*s.* to 6*s.* a quarter, but this estimate has been proved by Mr. O'Connor ("Trade "Report," 1884) to be true only of the year 1876, and has to be doubled now. As the cost of production in the Dakota prairies is reckoned at 12*s.* to 13*s.* a quarter, there is no advantage to the Indian grower on newly reclaimed land.

"secured. But 15 bushels per acre is a far higher rate of produce "than Indian agriculture can as a rule attain, and it is easy to see "that the margin of profit would speedily disappear with a yield "such as the statistics show to be generally prevalent in this "country."* Since these estimates were worked out, the Agricultural Department of the North-West Provinces was ordered to make further inquiries into the whole question of wheat cultivation; and last October the valuable report of Mr. W. C. Benett, director of that department, was published in the Official Gazette of those Provinces. He points out in the first place that as wheat is there chiefly grown on the best irrigated land, the estimated average outturn of 13 bushels an acre is too low, and that though the average outturn on unirrigated land is 12 bushels, as much as 33 bushels are produced on the best irrigated land, especially in Oudh, where the farms are as small as 3 acres. He estimates therefore the average outturn at 22 bushels, and though "this is "low, because there is a large area of inferior land under the "plough, yet on soils and under conditions really favourable to "wheat cultivation, it is doubtful whether the outturn is much less "than it is in England, and with the best cultivators it is probably "at least as great." Indeed, without such an outturn it would be impossible for the peasantry to keep themselves alive, and sanguine estimates as to an increased outturn are not likely to be verified. As it is the cattle die by thousands from want of food.

The cost of production per acre on the best kind of soil with canal irrigation, as given by Mr. Benett, is as follows:—

	Rs.	a.
Ploughing eight times and harrowing	6	–
Seed (100 lbs.)†	3	–
Sowing	1	–
Canal dues†	1	8
Labour	4	–
Weeding	–	12
Reaping	2	–
Threshing and cleaning	3	12
Rent of land†	8	–
Manure (3½ tons)	3	–
Total	33	–

* According to facts which I have collected from reports of district officers, a family of six requires at least 1½ lb. of grain per head per day, or 550 lbs. per year. Clothes and salt would cost 2½ rupees per head per year, or about 150 lbs. of grain. Rent, canal dues, land tax, and seed would amount to 600 lbs. per acre.

† Paid in cash 12 rupees 8 annas, the remainder contributed by tenant (at least in the case of nine-tenths of cultivators), his family, and oxen. Cartage from the field to railway, over an average distance of 30 miles, would cost 3*s.* per quarter.

With an outturn of 22 bushels of grain and 1 ton of straw, worth 7 rupees, the price of raising a bushel is 1 rupee 3 annas (equal to 2*s.*), and the price received is 1 rupee 8 annas (equal to 2*s.* 6*d.*), at 20 seers to the rupee. He concludes by saying, that "When the profits of the corndealer and the expense of bringing "the wheat to market are taken into account, it is not probable "that at this price the tenant recovers much more than the value "of his labour, and interest on capital expenditure on cattle and "implements." Whatever then be the margin of profit it will be very small, and yet it is on this that the cultivator relies for the support of those who depend on him, and are unable to work, for the payment of debts, for provision against bad years and the like. Now it is stated on official authority, that while the average number of an Indian family is somewhat over five, and the number of persons in an agricultural household is frequently more, the average area of tenant holdings is in the Punjab about 6 acres, in the North-West Provinces under 5, in Oudh 3 acres, and in Bengal probably about the same. As for debts, they are notoriously the rule rather than the exception, and bad seasons are not infrequent.

It is clear therefore that in none of these provinces can the cultivator hope to make any net profit from a wheat farm, and it is only in the Central Provinces where the farms are as large as 20 or 25 acres, where rents and land tax are low, and pasture and fuel plentiful, that it is worth his while to grow largely for export. Elsewhere if the cultivator of a 5 or 6 acre farm depends entirely on his wheat crop, the reason must be that he is forced by his indebtedness to grow rather for sale than for home consumption, as it is evidently his interest to grow barley or gram, or some other less exhaustive but more productive crop, and keep a stock of grain so that he may have the cheapest food supply for himself, family, and cattle. This is the primary object to be considered, not the amount of the grain exports. Where population is so dense as it is in India, it is absolutely certain that the surplus available for export is very small compared with the total outturn, and the question arises whether the Government is justified in adding to the foreign debt of India and to the burden of taxation in order that costly railways may be constructed to bring down to the seaboard, over distances varying from 300 to 900 miles, the surplus of bumper harvests which would otherwise be stored against famine. There is strong reason for believing that any profit which has accrued to the ryot as the producer, has been taken away from him as taxpayer, or will be taken away in a year of scarcity.

Bounties to Wheat-carrying Lines.

Let us take as an illustration the figures of the Indian wheat trade from the Punjab, and calculate the possible benefit derived by the agriculturist. In 1878 the Indus Valley line was completed, the Sindh, Punjab, and Delhi line being already constructed, so that through goods-traffic was made possible by rail from the Punjab to Kurrachee. The joint capital outlay on these two lines* up to 1882 was about 20 millions, the interest charges at 4 per cent. being 800,000*l.*, excluding past interest charges and loss by exchange, but as the lines only paid 2 per cent., there was a deficit to be made up by the taxpayer of 400,000*l.* The wheat carried down to Kurrachee in 1882, a most flourishing year, was 2,535,400 cwt.—about one-tenth of the total wheat export from India—of which the value to the agriculturist at about 4*s.* 6*d.* per cwt. was about 581,465*l.* Comparing the price of wheat in 1876, also a good year, I find that it was about† 16 per cent. lower, so that the gain to the producer on the export trade was about 95,000*l.*, and possibly as much again on the home sale of wheat in the urban markets for the well-to-do consumers. Against this has to be set the charge of 400,000*l.*

* The Sind, Punjab, and Delhi line traffic south of Umballa does not find its outlet *viâ* Kurrachee, and for the purpose of the above calculation that part of the line should be eliminated; on the other hand, the Northern Punjab line, with a capital outlay of 4½ millions sterling, ought to be added. I am aware that these lines were constructed partly for military purposes.

† The last Punjab administrative report gives the following list of prices in seers of 2 lbs. per rupee:—

	1856.	1876.	1882.
Cotton	5	3	3
Sugar	18	11	4½
Rice	21	9	7½
Wheat	33	25	21
Grain	48	31	26
Barley	51	36	33
Millet	52	34	31½

I have taken years of good harvests.

for that year, besides the past charges of 2,500,000*l.*; and as about one-third of the goods traffic consisted of wheat, it is clear that there was no gain on the whole account to the grower. The Government gave a bounty on all the import and export trade, on wheat going out of, and cotton goods and metals coming into the country, and the chief result to that part of India which is served by these lines was that the landless classes found it harder to live, that home industries were destroyed by foreign competition, that stores of grain were reduced to a very small reserve, and that the province would have been in danger of starvation if it had been visited by drought. And it is highly probable that the flourishing nature of the export trade will at the next settlement of the land tax be adduced as a reason for a higher assessment.

The Indus Valley and Sindh Punjab and Delhi Railways are the most signal instances of bounty-supported lines, but to a less extent all the wheat carrying lines are only worked by the help of the State. Thus the Oudh and Rohilkhund only earned 3·28 per cent. in 1881-82 to meet an interest charge of 5 per cent. on capital, and its arrears of interest amounted to over 1½ millions sterling; the Great Indian Peninsula, which brought down to Bombay about half of the total amount of exported wheat, though earning 6·28 on capital, had an interest charge of 6,611,096*l.* to wipe out; the Bombay, Baroda, and Central India, which brought to Bombay about one-tenth of the wheat, had an interest charge of over 3 million pounds. In short only two of the wheat carrying lines, the metre-gauge Rajputana railway and the broad-gauge East Indian, were in that year paying their way and yielding a surplus to clear off arrears of interest. Over these two lines there passed about four-tenths of the total wheat trade of India, and even they either fed or were fed by non-paying lines. It is clear therefore that even in a most favourable year the export of wheat from India was to a very great extent dependent on the State Aid rendered to the carrying companies, and that the peasantry had to pay heavily for its access to the foreign market. The increase of local rates since 1869 rendered necessary by the railway charges is a serious set off against the higher price of wheat during a few exceptional years. The Punjab, North Western Provinces, Oudh, and the Central Provinces have now to contribute about 800,000*l.* more in what are called local cesses, while during the period 1860-74 in Northern India, and 1870-84 in Bombay, the incidence of the land tax proper has, in certain districts, become heavier owing to fresh

assessments.* But if with the high prices† prevailing in the European corn market two years ago, owing to short supplies in Europe and America, the profit to the Indian grower was infinitesimal, how will he be able to secure any profit at all if prices in the English market remain at their present level? A drop from 45*s.* in 1882 to 32*s.* or 35*s.* a quarter in 1885 turns a possible profit into a certain loss, and if the export of wheat from

* *Land Revenue for British India.*

1856-57.	1867-68.	1870-71.	1874-75.	1882-83.
£	£	£	£	£
17,902,913	19,986,640	20,622,823	21,296,793	21,879,947

I have taken normal years. Oudh is I believe excluded in 1856-57.

Local Rates Imposed 1860-80.

	1869-70.	1877-80.
	£	£
North-west Provinces and Oudh	426,000	110,000
Punjab	190,000	49,000
Central Provinces	24,000	12,000
Bengal	340,000	338,000
Bombay	217,500	None
Madras	546,000	,,

Besides these fresh rates, old local rates were embodied in the accounts and made more stringent. In Bombay and Madras land tax reassessed.

† *Price of Wheat in Number of Seers* (2 *lbs.*) *per Rupee.*

	1861-64.‡	1876.	1883.	1884. January.	1885. January.
Kurrachee	16·0	13·06	13·1	13·0	15
Delhi	22·25	25·71	18·71	19·0	24
Lahore	23·0	24·24	24·42	23·0	26
Fyzabad	25·0	25·95	17·71	18·0	22
Cawnpore	24·10	24·15	18·73	19·0	25
Jubbulpore	25·6	26·53	—	23·0	25
Calcutta	18·6	17·13	14·32	12·0	16
Bombay	11·4	11·64	10·29	10·50	12

‡ 1861 was a bad year in Northern India, the rest of the above years were good.

In 1871 the East Indian, Great Indian Peninsula, and Sindh, Punjab, and Delhi, were practically finished.

In 1874 the Oudh and Rohilkhund was opened.

In 1878 the Indus Valley was opened.

In 1881 the Rajputana railway was completed, and through traffic between Bombay and Agra effected by aid of the already completed Bombay Baroda and Central India.

India continues, it merely means that the cultivator is so enslaved to the middleman that he hands over his crops to the latter at any price that may be fixed upon at harvest time.

Competition of India and America.

But the present falling off (see Appendices II and III) in the export of wheat from India would lead us to suppose that it will not continue to the same extent, and that it is only under exceptionally favourable circumstances that India is able to compete with America. The reason is that the latter has such overwhelming advantages in its favour, that it is only in the event of a very large failure of the wheat crop that they can be contended with by the former. On the one hand, America has splendid virgin resources, eagerly competing railway companies ready to run any amount of risk in the hope of recouping themselves from the sale of land blocks, adventurous go-ahead farmers, unlimited command of capital and machinery, and a sparse lightly taxed population with an enormous surplus of produce. On the other hand, India has an over-worked, often ill-manured soil, railways constructed or guaranteed by a foreign Government which dare not run risks, and has no great blocks of land to offer to European settlers, a multitude of industrious but impecunious farmers pre-eminent in manual skill, but with no facility for machinery, and a dense heavily-taxed population which, taking good or bad years together, requires, except in the most fertile parts, all the food it grows.

India is said to have the advantage of free trade, but anyone who takes into consideration the salt monopoly, the working of forest laws, the sense of insecurity arising from the imposition of fresh local cesses, or reassessment of the land tax, and the protectionist principles applied to railway construction, will easily see that the term is merely intended as a synonym for the abolition of the cotton duties; whereas America, which has already complete internal freedom, has it in her power to turn the tables on her Oriental competitor by the adoption of free trade in her commerce. And there can be little doubt that the American Government will be forced by its western farmers to carry out this policy, if they find themselves too heavily weighted in the struggle. [M. Mongredien recently estimated the loss to the agricultural classes from the protective tariff as amounting to 80 millions sterling a-year.] Such a contingency is fully recognised by the English advocates of a rapid development of India's communications. In fact they hope to use protectionism in the shape of railway guarantees as a weapon of war whereby to frighten America into free trade. The weapon may prove very costly to India and the war very wasteful, but English merchants are sure to receive some solid advantages, and with such a prospect in view the staunchest champions of free

trade are quite ready to swallow their principles on the plea that they are not applicable to the economic condition of the East. It is true that where it is a question of abolishing import duties on Western goods and destroying Eastern industries, the viciousness of protectionism cannot be too forcibly denounced, but this viciousness is not regarded as extending itself to a system of State-aided monopoly, which levies a local rate to give a bounty to English machinery and iron.

But not only is this system unfair to India, it is unfair to England also. In the former country it causes a rise of prices which bears hardly on the landless classes, and prevents the abundance of one year from compensating for the scarcity of another; in the latter it causes a fall of prices which bears hardly on the landowners whose rents fall, on the farmer whose profits disappear, and the agricultural labourer whose wage fund is curtailed. Fair traders point to foreign competition resulting from free trade as the cause of agricultural depression, but if they will only examine more closely into the matter, they will see that it is largely due to the protectionist policy of the Indian Government, which has stimulated the struggle between India and America. India has in fact been used as a lever whereby the whole weight of American enterprise has been rolled with increasing velocity upon the English wheat-grower. In 1883 England imported from India 11,243,497 cwt. of wheat out of the total export of 20,000,000 cwt., whereas in 1874 the total export of wheat from India was only 1,755,954 cwt. It is pointed out by the official compiler, himself an advocate of free trade, that the extension of the railway system had greatly facilitated this export, but the fact that four at least of the railways carrying wheat were only working by the help of a State subsidy is not mentioned in the trade report. Fortunately for India the whole question of railway construction was last session referred by the Secretary of State to a Parliamentary Committee, and although the scope of its inquiry was very limited, yet it was sufficient to demonstrate the fallaciousness of the official railway accounts, the consequent ignorance of the non-official world as to the financial position of Indian railways, and the danger of sanctioning the extravagant demands of the Indian and English Chambers of Commerce. Indeed it is evident from the report that the Committee gave a very half-hearted assent to the much more moderate requests of the Indian Government.

Programme of Indian Government for New Railways.

The programme laid before the committee was as follows:—The Indian Government proposes to spend either directly or through the agency of companies during the next five years 33,462,000*l.* on its own financial responsibility, and to leave

34,388,000*l.* to be spent on the financial responsibility of any other persons who might like to undertake it. Of the former sum the State is to spend 17,822,000*l.*, and the companies 15,640,000*l.*, raised if possible under a limited guarantee such as has been granted to the Bengal Central Company. The chief lines to be constructed by the State are regarded as necessary to protect districts lying to the north and south and east of the Central Provinces against the effects of drought, but as they are not likely to prove a commercial success* they will add to the already existing burden of the Indian taxpayer. Whether companies will be formed to construct the other set of railways appears very doubtful, unless the Government is willing to offer better terms than a limited guarantee during the period of construction. The prospectus of lines left to private enterprise pure and simple may be dismissed as a literary *jeu d'esprit*, so far as private enterprise is concerned.

Financial and Economic Consequences.

The Indian Government is so well aware of the speculative nature of the proposed scheme, that it felt it necessary to show that there will be a sufficient surplus from the ordinary revenues supplemented by a portion of the famine fund to cover the net charge likely to be incurred by the State on account of interest for additional debt and of capital outlay from ordinary revenues. This charge was estimated to amount at its highest incidence to over $1\frac{1}{2}$ million sterling in 1890-91, and the annual increase of surplus revenue in the Indian budget, estimated for the current year at about 479,000*l.*, was reckoned at 414,000*l.* To this a sum of 200,000*l.* was added from the famine fund. But the uncertainties of Indian finance are proverbial, and it is not at all unlikely that operations on the north-west frontier, or famine, or a falling off in the opium revenue, or a further depreciation of silver (each farthing costs 220,000*l.*), will entirely upset the official estimates for future years. Already, since they were made out, a sum of about half a million sterling per annum has been hypothecated for the continuance of the Kandahar railway, thereby sweeping away the estimated

* One of the famine lines is to go through Bundelkhund, which has during the last twenty years been deteriorating in every respect. Hitherto in time of famine the population has migrated, now it is proposed to bring food to them. They are likely to become less provident and self-reliant. In the Jhansi district the real cause of the poverty-stricken condition of the peasantry is to be found not in the want of railways, but of a suitable revenue system. The Jhansi Relief Bill is an admission of this fact. An agricultural population ought to be placed on a self-supporting basis. Sir A. Lyall in his memorandum on the Rajputana famine of 1868, notices its effects in sharpening the wits and foresight of the people. When the famine of 1877 came, "all the Thakars had laid up much larger reserves of "grain, and indeed all the people had done this according to their capacities, "while I believe a good deal more forage has begun to be raised for the cattle."

surplus for 1884-85. Moreover the rapid fall in the price of wheat in the English market has so seriously affected the receipts of the chief Indian railways, that according to the financial statement of 17th March there is a decrease* of 732,000*l.* on the estimates of last March.

The surplus has thereby been turned into a deficit, and as the Parliamentary Committee refused to give its sanction to the proposal of the Indian Government to hypothecate part of the famine fund as a railway guarantee fund, there is absolutely no margin on which the Government's scheme can be worked unless extra taxation is to be imposed. The Indian Government has distinctly repudiated the idea of its scheme involving any fresh taxation, and the Committee has most emphatically endorsed that declaration, but if the present proposals are carried out in the face of increased expenditure for military purposes and of a depressed export trade, it is perfectly certain that another turn of the screw will have to be made, and it will be in the direction of an enhancement of the land revenue, which in official parlance is not regarded as taxation, but rent. Reassessments of the land are already taking place in Bombay and Madras, and they will shortly take place in some of the districts of the North-West Provinces, and it is an open secret that the Bengal Rent Act is by many regarded as a prelude to the enhancement of the Bengal land tax. The economic and financial consequences of such enhancements will be that after a period of artificial inflation there will be a further drain on India in the shape of increased home remittances to pay interest on loans raised in the English market and the accumulation of capital in India will be still further impeded, and in all probability after the capital sum is expended a fall in exchange will add a fresh burden to the Indian taxpayer, just as it has done in the past. The advocates of the Public Works Policy of the Indian Government meet the above considerations by pointing to the success of the Indian railway system as a whole, by insisting on the greater cheapness of materials and money at the present time,

* The effect of wheat trade on the railways is shown in the difference between the budget and revised estimates for 1884-85 :—

	£
East Indian	− 580,000
Rajputana railway	− 47,000
Oudh and Rohilkhund	− 75,000
Nagpore Chattisgarh	− 7,500
Sind, Punjab, and Delhi	− 90,000
Great Indian Peninsula	− 30,000
Indus Valley	+ 97,500

It will be observed that the only wheat-carrying line showing an increase is the Indus Valley, and the estimates in March, 1884, for this line were admittedly low. The total decrease on the East Indian since 1st April, 1884, compared with the previous year, is 767,500*l.*

and the probability of enhanced revenues, owing to the development of the country. But their arguments are of the most misleading nature. First, the Indian railway system does not pay as a whole, if, as has been pointed out above, to the capital actually borrowed there be added the various charges that have been imposed for the last thirty-five years on the Indian taxpayer. "The aggregate charge," according to the Committee's report, "up to the end of the current year is 41 crores of rupees, or "(in the conventional exchange of 2*s.* to the rupee) 41 millions "sterling, excluding interest on the sums so laid out, which would "amount to about 30 crores of rupees in addition." Instead therefore of paying 5·68 per cent., Indian railways really pay a little over $3\frac{1}{2}$ per cent. Secondly, an analysis of the receipts of the different lines shows that whereas three or four lines, notably the East Indian and Eastern Bengal, have during very favourable years begun to pay something over their guaranteed interest, including loss by exchange, the rest only pay between 2 and 3 per cent. Hence to argue from the success of already existing lines running through the most fertile districts to that of future lines, which will have to develop traffic through a poor country, betrays the old fallacy of induction *per enumerationem simplicem*. This difference of natural conditions is a serious set-off to any advantage in cheaper materials and an easier money market. Thirdly, if development of trade increases the land tax and the home remittances, is the country benefited? In his last Indian budget speech Mr. J. K. Cross stated this factor in the problem in the following form:—

"If we borrow in England for Indian purposes we must pay "the interest of the loans here. For every million sterling we "must remit 35,000*l.* a year; for every 10 million pounds we must "therefore remit 350,000*l.* Now if the expenditure of this 10 mil-"lion pounds so developes the country in which it is spent that "with no more spending of force 350,000*l.* worth more produce is "available for export, it is then possible that things may go well. "If the development is greatly in excess of the interest required "there will be no difficulty, and quick advantage rests with India. "But if the expenditure should not produce its due return, the "people of India must be taxed to meet the outlay; and this is "not all.

"The remittances for interest come home not in coin but in "kind. * * * * An extra charge for interest involves the "sending of an extra amount of produce. For every 35,000*l*, "being the interest on every 1 million pounds borrowed, there will "be a remittance required equal to the annual produce of 25,000 "acres of land. For every 1 million pounds borrowed here you "therefore hypothecate the produce of 25,000 acres in India, and

" the difference between borrowing here and obtaining the money " from *bonâ fide* Indian sources, is that in the one case the produce " will leave the country as tribute to the creditor, in the other it " will not, but becomes available for food in India, or as a com- " modity for exchange."

The Protectionist Policy of Indian Government.

From whatever point of view we look at the question, it is difficult to resist the idea that the Indian Government is running a very distinct risk for a very doubtful object. Politically it is dangerous to increase still further the foreign debt of India, and thereby make the European bondholder dominate over its finance and its destinies. Economically it is delusive* to divert by bounties the trade of the country into external channels in the hope thereby of enriching its people. Financially it is disastrous to face a future of very fluctuating assets with a fixed increase of liabilities. It is now admitted that the productive public works policy has entailed a very heavy burden on India, and that, though that burden has been of late years somewhat lightened owing to very exceptional conditions, yet it is still appreciable in weight, and might under unfavourable circumstances again disarrange Indian finance. Instead of being forced to embark in further schemes of railway construction, the Indian taxpayer may fairly ask for a remission of taxation, especially as regards salt, if the receipts from the already existing lines improve. The cry for more railways has arisen rather from the English and Anglo-Indian than the Indian world, and it has been greatly strengthened by the misleading way in which the Public Works Department has made up its accounts. One most beneficial consequence of the recent inquiries of the Select Committee is to be seen in the sobering effect of its revelations on those who were most positive as regards the profitable nature of Indian railways.

The Indian Government, however, now finds itself in an awkward predicament. It has issued fallacious figures to entice private enterprise, and now that private enterprise has discovered their fallaciousness, the Government finds itself pressed to float its own prospectus. It has declared certain railways indispensable, and cannot now declare them optional. It protests that it has the strongest objection to imposing any further taxation for the purpose of railway construction, and yet it will be forced either to enhance

* Mr. Benett in his above quoted report points out that " the trade with other " parts of India which used to be considerable, has fallen off—not relatively—but " absolutely. The trade with Calcutta and Bombay, that is to say with Europe, " is absorbing the trade with other parts of India." He does not think that any new line is likely to affect trade, but recommends good metalled roads. There is no evidence to show that the proposed Cawnpore Gwalior line, for which the Government has just given a 4 per cent. guarantee, is likely to pay.

the land tax or to appropriate a portion of the famine fund,* a step which will in the future necessitate further taxation. It puts forward protection against famine as a plea for railways, and yet gives a bounty on the export of food. It boasts of the advantages which free trade has given to India, and yet it binds itself down still further in the fetters of protection.

The admitted difficulty of raising funds in India and the further depreciation of the rupee has necessitated an appeal to Parliament for power to raise sterling loans in the London market, and it is to be feared that great pressure will be put upon the English Government by individuals and bodies, whether English or Anglo-Indian, who are interested in the further construction of Indian railways, and the only way to meet such pressure is to appeal to a public opinion which is stronger than that of any section of the House of Commons.

India's Great Need is Free Trade.

Let Parliament listen not to the noisy clamours of Chambers of Commerce, but to the quiet warning of one who though dead yet lives to urge a policy of justice to our great dependency. In his latest work on "State Socialism" Fawcett wrote, "It has often "happened that the construction of public works in India has "involved the Government of that country in very grave financial "difficulties. When the return upon the works is not sufficient to "pay the interest on the loans raised for their construction, the "deficit has to be made good by an increase in taxation; and in a "country such as India, where the mass of the people are extremely "poor, and where the sources of taxation are very limited, it is "almost impossible to exaggerate the harm that may be done if it "becomes necessary to resort to increased taxation." Nor is this the view of the late Postmaster-General only. In the course of the last two Indian budget debates Mr. E. Stanhope insisted most forcibly on the necessity of great care in the expenditure on public works.

* When the Famine Insurance Fund was formed in 1877 by the imposition of local taxes in Northern India, and a licence tax on traders throughout India, Lord Lytton in a speech delivered 27th December, gave assurances that funds locally raised should be locally applied. He further stated that "the sole justification of "the increased taxation which has just been imposed upon the people of India for "the purpose of insuring their empire against the worst calamities of future famine, "so far as an insurance can now be practically provided, is the pledge we have "given that a sum not less than a million and a-half sterling, which exceeds the "amount of the additional contributions obtained from the people for this purpose, "shall be annually applied to it. We have pledged ourselves not to spend one "rupee of the special resources thus created upon works of a different character." In a minute of 12th March, 1878, the Viceroy defined the purposes of the extra taxes as direct discharge of debt in times of prosperity, or investment of surplus revenue in productive public works. The Indian Government recently proposed to utilise part of it for the creation of debt.

The truth is that what India requires much more than costly railways along the great routes of trade is cheap metalled roads across country, so that its produce may be circulated with greater ease in the interior. Persons who are easily misled by ambiguous terms, justify State construction of railways in India on the ground that they are "improved communications," and that it has always been the duty of the State to improve communication. But railways are more than roads or rivers, merely highways of trade, they constitute also a great carrying trade; they do not merely offer facilities for the public use of carts, pack bullocks, boats, or the like, but they provide a special kind of carriage, and in so far as they are not self-supporting, but subsidised by the State, they constitute the worst kind of protected monopoly. They tend to force traffic into certain artificial channels, to stimulate it along the main routes as opposed to the cross routes, and if leading to the sea coast to encourage the external at the expense of the internal trade. In the matter of communications India presents a very similar picture to that drawn of France by Adam Smith during the last century, when the intendant, "the proud minister " of an ostentatious court," neglected the village roads maintained in old days by the local *corvée* under the provincial magistracy, and expended labour and money alike on the magnificent highways. Imperial railways have in India absorbed, through the medium of guarantees, local funds which might have been spent on local roads, or the support of local industries, or the repair of local irrigation works.

This policy ought to be abandoned. If more railways are to be built, let the advocates of such railways have the courage of their opinions; let them, as has been done in the case of some of the small provincial lines, such as the new Tarkessur railway in Bengal, induce native capitalists who are on the spot, and are acquainted with the needs of the localities, to come forward and subscribe, so that the benefits of the undertaking may be distributed in India. Or if they are confident of the prospects of success, let them persuade English capitalists to run the risk. At the same time the State must not appropriate all the best routes to itself.

The State has sufficient work on its hands, and in the matter of railways should confine itself to the construction of lines which are demanded by the most urgent military necessities. It is high time that private enterprise should fling away the crutch of a State guarantee, and walk on its own legs. The English and Anglo-Indian commercial community requires to be cured of its inveterate habit of asking the Indian Government to thrust its hands into the pockets of the native taxpayer. It rests with the English Parliament to play the part of policeman.

APPENDIX I.

TABLE A.—*Charge to the State on Railways.*

	1880-81.	1881-82.	1882-83.	1883-84.	1884-85 (Estimate).
	£	£	£	£	£
(1.) Guaranteed, including loss by exchange, after deducting net traffic receipts	1,121,333	816,944	1,121,975	1,294,400	886,000
(2.) East Indian	1,390,543	1,673,688	1,603,398	1,706,100	1,786,200
(3.) State lines	1,204,660	1,160,445	1,226,702	1,321,000	1,459,200
Loss by exchange on (2) and (3)	About 500,000	About 505,000	About 510,000	About 515,000	About 520,000
	4,216,536	4,156,077	4,462,075	4,836,500	4,651,400
Net traffic receipts of (2) and (3)	3,432,132	4,131,862	3,632,711	4,385,000	4,501,300
	784,404	24,215	829,364	451,500	150,100
South Mahratta and subsidised	—	17,527	72,613	183,600	177,900
Capital outlay on—					
(1.) Protective lines	—	614,551	—	625,900	898,100
(2.) Frontier „	2,293,615	224,682	259,500	—	138,700
Total charge	3,078,019	880,975	1,161,477	1,261,000	1,364,800
Difference between budget and revised estimates of 1884-85 for receipts of guaranteed and State lines					626,000
					1,990,800

TABLE B.—*Loss by Exchange on Total Remittances.*

1873-74.	1875-76.	1880-81.	1883-84.	1885-86.
£	£	£	£	£
591,362	1,034,293	3,174,000	3,838,756	3,573,600

TABLE C.—*Secretary of State's Drafts on India.*

1861-62.	1872-73.	1878-81. Average.	1881-82.	1885-86. Estimate.
£	£	£	£	£
4,000,000	11,000,000	15,460,000	18,412,429	16,804,900

TABLE D.—*Balance Sheet showing the Inflation and Depression of the Indian Wage Fund by Outlay on Railways.*

	Years.	In England.	In India.
		£	£
(1.) Capital outlay on—			
(*a.*) Guaranteed lines	1850-72	38,000,000	46,000,000
	'72-82	11,000,000	3,000,000
(*b.*) State lines	'68-84	9,500,000	28,500,000
(2.) Remittances to England for interest and surplus profits on total railway account	'50-84	110,000,000	—
		168,500,000	77,500,000
		77,500,000	—
Balance against India	—	91,000,000	—

Remittances to India of Treasure and Government Bills.

Period between	Treasure.	Bills.
	£	£
1868-69 and 1871-72	40,000,000	29,500,000
'72-73 „ '75-76	16,500,000	50,500,000
'75-76 „ '82-83	65,426,000 (Gold 17,000,000)	102,815,000

TABLE E.—*Showing Connection of Railways with Trade, by rough Analysis of Receipts for Carriage of Goods and Passengers in* 1881-82.

General Merchandise—	£		£
Wheat*	2,000,000	Stores, coals, &c.	1,200,000
Rice and grain	500,000	*Passengers—*	
Cotton, raw	900,000	First class	180,000
„ manufactured	600,000	Second „	266,000
Salt	600,000	Third „	363,000
Seeds*	1,000,000	Fourth „	3,248,000
Hides, tea, coffee, indigo, &c., &c.	2,000,000		5,257,000
Metals and other imports	1,262,000		8,862,000
	8,862,000	Total	14,319,000

TABLE F.—*Taken from Mulhall's "Dictionary of Statistics."*

Countries.	Passengers.	Goods.
	Mlns.	Mln. tons.
United Kingdom	752	256
„ States	270	290
India	48	9
All Europe	1,397	668

* Of wheat about five-sixths, and seeds about two-thirds, carried for export.

APPENDIX II.

Transport charges per quarter are as follows:—

	s.	*d.*
Delhi to Bombay (890 miles)	6	6
Fyzabad to Calcutta (598 miles)	5	2

These are the lowest charges in India, and are at the rate of one-seventh of a pie (one-eighth of a penny) per maund of 82 lbs. per mile, as compared with one-seventh of a pie charged on the American line from Chicago to New York (960 miles), when the charge is 30 cents per 100 lbs. We get therefore the following calculations:—

	s.	*d.*
Price in up country market	18	–
Railway transport to Calcutta	5	2
„ Bombay	6	6
Freight from Calcutta	7	9
„ Bombay	6	8
	30*s.* 11*d.* or	31*s.* 2*d.*

	s.	*s.*
Incidental charges* for bagging, agency, wharfage, &c.	3 to	4
Price in London	about 34 „	35

	s.	*d.*
For the Punjab the market price would be much the same, say	18	–
Railway transport from Lahore to Kurrachee	7	–
Freight to London	7	–
	32	–
Incidental charges, 3*s.* to 4*s.*	3	6
	35	6

APPENDIX III.

Area under Wheat in India in 1884-85.

	Acres.	Average.
Punjab	7,250,000	6,750,000
North-west provinces and Oudh	5,250,000	5,000,000
Central provinces	3,700,000	4,000,000
Bombay	1,750,000	1,750,000
Berars	850,000	807,500
	18,800,000	18,307,500

* These charges are taken from a letter of the Bombay Chamber of Commerce, October, 1883, to the agent of the Great Indian Peninsular Company. When the market price of wheat is 18*s.* per quarter, it is very doubtful, at least in Northern India, whether the grower can pay his way.

Exports of Wheat in the Ten Months April to January.

	1881-82.	1882-83.	1883-84.	1884-85.
	Tons.	Tons.	Tons.	Tons.
Bengal	321,123	195,672	373,568	121,707
Bombay.....	495,893	293,277	417,763	373,000
Sindh.....	85,159	101,688	183,093	160,743

In 1881-82 one-tenth exported *vid* Kurrachee, more than half *vid* Bombay.
„ '83-84 one-fifth „ less „ „
„ '84-85 one-fourth „ nearly three-fifths „

In 1883-84 the Sindh Punjab and Delhi, and Indus Valley Railways carried down about one-fifth to Kurrachee, and the Sindh Punjab Delhi, East Indian, Oudh and Rohilkhund lines carried two-fifths to Calcutta, the Rajputana, Bombay and Baroda carried one-tenth, and the Great Indian Peninsula three-tenths to Bombay.

Imports of Wheat into England from the Three Chief Countries.

	1882.	1883.	1884.
	cwt.	cwt.	cwt.
Indian.....	8,477,479	11,243,597	8,009,909
American, total	42,836,885	37,336,750	32,946,697
(Pacific)	14,712,393	11,806,637	8,284,810
Russian	9,571,021	13,293,358	5,401,964
Price of wheat in London per qr.	53*s.* 3*d.* to 39*s.* 6*d.*	43*s.* 3*d.* to 40*s.*	39*s.* to 30*s.* 10*d.*

	1877-78.	1878-79.	1879-80.	1880-81.
	cwt.	cwt.	cwt.	cwt.
Total exports from India	6,340,150	1,044,709	2,195,550	7,444,375

	1881-82.	1882-83.	1883-84.	1884-85 (Ten Months).
	cwt.	cwt.	cwt.	cwt.
Total exports from India	19,863,520	14,144,807	20,956,459	13,100,578

Indian wheat amounted to 10·9 per cent. of the total imports into England in 1882, 13·9 per cent. in 1883, and 12·8 per cent. in 1884. It is able to compete best with the wheat from the Pacific sea-board, but that in 1884 only formed one-fourth of American exports as compared with more than one-third in 1882.

The following figures are taken from the last Punjab Administration Report:—

	Area in Acres under	
	Wheat.	Barley.
1880-81	6,509,000	1,909,550
'81-82	6,596,605	1,616,790
'82-83	6,734,357	1,648,076

Note.—This points to substitution of crops.

Discussion *on* Mr. A. K. Connell's Paper.

The President said he rose to express Sir James Caird's great regret that he was not able to be present, having been called away to Scotland by the death of a relative. He had however written him a letter expressing his opinion upon the paper after a rapid perusal, and of this he (the President) would read the substance, in anticipation of what he believed would be a profitable and interesting discussion. Sir James wrote :—

"There is much that is worthy of serious attention in that paper. The writer draws a true distinction between the conditions of the export of food from an old fully peopled country, with a much exhausted soil such as India, and a rich virgin soil, with a small population, such as America; and I agree with him in part that in those districts of India subject to drought and famine, where the want of ready means of export led to the preservation of surplus crops in good years to meet the wants of famine seasons, there will be danger that railways may in some localities draw away all their resources.

"But on the other hand a higher price caused by demand for export will greatly stimulate production, and thus enable the country to retain to itself the larger crops grown when a necessity arises for doing so.

"The opinion I expressed to the House of Commons Committee was that railway expenditure should begin with, and be limited to the most populous and therefore richest parts of the country, until these were reasonably accommodated. I believe that thus the most effective relief would be given in time of famine, as in such countries, if there were no railroads, the work of carrying food to 500 people on each square mile would be five times greater than to places with 100 to the square mile. For the same reason there would be five times the traffic at other times, and thus the best security that the railways should pay, and no new charge be laid upon the resources of the State.

"I am opposed to guarantees of expenditure for railways which are not likely to pay, and would leave all such until the useful and

paying lines are made. It would be time enough then, if the country could afford it, to make cheap lines through the next best districts. In the winter season, when there is little or no rain, great parts of the plains of India become like hard road, without any expenditure. And for that reason outlay on local roads is not such a necessity as railroads which are really required."

Mr. W. J. Harris, M.P., said that while listening to the paper he had had some little difficulty in deciding in his own mind whether the lecturer was a free trader or a protectionist. As a moderate protectionist himself he really almost felt inclined to argue on the free trade side for once in his life, as he considered the lecture was full of economic fallacies. Many of the arguments used by Mr. Connell, although he professed to be a political economist of the Cobden Club School, were really protectionist arguments. For instance he wished to lead them to believe that it was not the duty of a free trade country when it conquered a dependency like India, which had very little developed wealth, to do anything for its development. There could be no doubt that the railways and irrigation works were the most useful works for the development of India which could possibly be undertaken. He could only say that if it was the duty of a free trade country to abstain from undertaking such works, he would rather not belong to a free trade country. He (Mr. Harris) felt no doubt in his own mind that it was our duty to develop the communications of India in every way possible, seeing that it was a conquered country, and that we were therefore responsible for its progress. Mr. Connell told them that the making of railways in India stimulated a competition between that country and America, and had lowered the price of wheat very much in England to the disadvantage of the English farmer. Possibly to some extent it might have done so, but when they came to consider how small was the amount of wheat they had thus far received from India, compared with the amount received from many other countries, it could not be contended that the increase therefore had produced any very great effect. They received two or three times as much from Russia alone in most years as from India, and at as low a price. Mr. Connell seemed to think that the low price of wheat in this country, which was caused by competition in all parts of the world, was a disadvantage; but it must be remembered that the low prices were a great benefit to the poor. It could not be considered altogether as a farmer's question, nor could the fact of such large imports as we now received, depressing the price of wheat here, be used as an objection in any way to Indian railways, while other nations were the principal offenders. Would the lecturer argue that the construction of irrigation works with Government guarantees was not consonant with his ideas of political economy? Could he believe that it was any disadvantage to India that when, as he himself asserted, she could produce double the quantity of produce where irrigation works were made, that this was an outlay that ought not to be undertaken? If the argument was applied to railways on economic grounds, it must also be applied to irrigation works, for if the one

was not consonant with the laws of political economy, neither was the other. Mr. Connell also complained of damage to the "landless labourer" class, and he admitted that that class was only 40 millions out of 250 millions. He (Mr. Harris) held on the contrary that it was not a damage even to this one-sixth part of the community, because the carrying trade from which Mr. Connell asserted that they derived their living had rather been increased than diminished since the introduction of railways. The various districts contiguous to the railways had much more employment for the carrying trade now than there had used to be, seeing that more land was cultivated, and that the produce had all to be moved to the nearest railway station, whereas previously a much smaller quantity was removed to the nearest river, and it floated down to some other part, at a minimum rate of manual labour. The destruction of home industries of which Mr. Connell complained was a distinctly protectionist argument. He (Mr. Harris) maintained that every nation had a right to protect those industries which were necessary to its happiness and existence, and if the home industries of India were being entirely destroyed owing to the importation of manufactured goods, it was undoubtedly of some present disadvantage to the people of India. But India had not yet got the advantage of machinery, and she was bound to go through this crisis of going from hand labour to machinery, even if it entailed some suffering in the meantime. Even he (Mr. Harris) would never advocate the protection of hand labour against the advantages of machinery. No doubt the middle men such as the Zemindars took a great deal out of the gross cultivation of the soil, and the lecturer had very properly alluded to this evil. This was greatly owing to our system of taxing the land and not allowing the natives to hold it as their freehold. If the natives could have the option of buying up the land tax and becoming possessors in fee of their land, they would not have to pay such a high rate of interest for their loans, and would take that extra trouble in cultivation which ownership induces. The system now adopted was exactly the system which Henry George proposed for our own country, namely, a tax on the land which rose with its increased value. The lecturer admitted this when he said that if the produce increased in value the Government exercised the power of raising the land tax in proportion. That was a system which was most discouraging to any one who had to till the land year after year. He did not however see by the statistics which the lecturer had given that the land tax had very much advanced, and his impression was that the Government had not imposed that great increase of taxation which Mr. Connell feared. No doubt the present low price of wheat was bad for India and also for other exporting countries, but he (Mr. Harris) had sold Indian wheat at over 52*s.* within the last five years, whereas it was now at about 32*s.*, and he did not at all despair of its some day reaching 52*s.* again. They were going through a crisis in all trades, and he did not anticipate that these exceedingly low prices would continue for a great number of years. He did not believe that other nations could afford to send large quantities of wheat at present prices, and

therefore some improvement might be anticipated in the exchange that the native received for his wheat, and if more railways were made, that improvement in price would extend to a greater number when it came. If they could now send us wheat at 32*s.* per quarter with such incomplete communications as they now had, it must become a most profitable business when the price was 10*s.* higher with easier means of transit. Mr. Connell said that taking away the food of the working classes in India had caused distress on account of its being very much dearer to the native consumer. But he must remember that the Indian ryot lived almost entirely on millet and rice, and sold his wheat. If therefore by selling his wheat at a higher price than he used to get for it, he could procure for himself more of those other articles that he required, the argument of the lecturer would not hold good. There was still a vast amount of uncultivated land in India, and although Mr. Giffen had also urged that the production of India could not be much increased, he (Mr. Harris) held an entirely different opinion. The very fact that the lecturer had brought out that irrigation produced a double crop wherever it was tried, was one answer to that; and when they came to examine the vast uncultivated tracts of land which still remained, and were eminently suitable for wheat culture as soon as railway communication could be brought near them, they must admit that they were not nearly at the end of India's resources, but were, on the contrary, much nearer the beginning of them. When Mr. Giffen argued in his inaugural address some years since that the population of India would very shortly overtake its means of subsistence, he did not remember that the extremely frugal fare of the Hindoos made the comparison with European and North American nations quite illusory.* In all probability the 50 millions of inhabitants in the United States were eating far more food at the present time than the 250 millions of Hindoos. In conclusion he would ask the lecturer to prove that the wages of labourers in India were at present lower than twenty years ago, and that the means of living were proportionately dearer; and secondly, was there less variety of employment now than there was then? because if that were so he would admit this much, that the happiness of a people as well as their wealth ought to be taken into account, and that to reduce the variety of employment of any people was to take away to a certain extent from their happiness.

Mr. Moncreiff Paul said the question of food supply was at all times important, but especially so at a time when they were just emerging from the possibility of war with a country to which they had looked as a great producing centre of wheat. That being so, the frequent inquiry some weeks ago in Mark Lane was to what price would wheat go in consequence of those supposed hostilities? Instead of advancing about 15*s.* or 20*s.* a quarter, as it might have done some thirty years ago, it only rose 5*s.* on foreign and 8*s.* on home grown when the war scare was at its height. Why was this

* See note by Mr. Giffen at the end of the report of the discussion.

so? Because the supplies which they had been in the habit of getting so largely from Russia were now obtained from other countries, including India, and therefore it was very important to look to the possibilities in the future of what India could do with respect to wheat supply. Whereas in 1875 India gave them only $2\frac{1}{4}$ per cent. of the total importations, in 1884 she had come up to $12\frac{1}{3}$ per cent.; and whereas ten years ago they had 17 per cent. from Russia, last year they had only received 8 per cent. Then came the inquiry, what was the lowest price at which India could export wheat profitably to the producer? In 1884 wheat was abnormally cheap. In November last it was actually lower in price than barley; but notwithstanding the low level, India sent them 12 per cent. during a cheap year, and he believed she would continue to send wheat, even though the prices remained at the same low level. It had been argued that America could not profitably export wheat at less than 35*s.*, while on the contrary India could grow at a profit at 35*s.*; but when they analysed that amount they found that 20*s.* of it represented intermediate charges, and did not go into the pockets of the producer. What would railways do for them? They would enable the producer and the consumer to be brought *en rapport* more easily and at cheaper rates, and while the producer would get the same figure for his wheat as he originally did, the consumer would be able to obtain it at a cheaper rate by reason of the charges for transit being lessened by increased facilities. The productive power *quâ* wheat in India was very great; at present she produced $26\frac{1}{2}$ millions of quarters, a quantity equal to the aggregate importations and home growth of this country. He was afraid they could not accept the economic conclusion at which Mr. Connell had arrived in his paper, because while he desired to pose as a freetrader, he was really an advocate for protection. If they accepted what he said, they should sweep away the iron horse and fall back upon the bullock wagon and the river barge, and if they did that in India, why not do it in England? where the reaping machine had taken the place of the reaping hook and the scythe, agricultural blessings which might with good effect be carried to India from this country. He agreed with Mr. Connell that mistakes might have been made in the laying down of the railways in India. It was manifest that care must be taken where and how the lines were made, and how they were guaranteed, but he could not for a moment accept the idea that India was not to be benefited by any further judicious development of her railway system.

Mr. Edmund Kimber said this was undoubtedly a very able paper, but there were underlying it some very serious fallacies, and some of the arguments were only carried half-way to a conclusion. For instance they were told that in 1874 the total export of wheat was only 1,755,000 cwt., and in 1873 it was 11,000,000 cwt. The gist of the argument of the paper up to that point had been that railways must not be constructed because they created such enormous facilities for carrying off the surplus food supply to other countries, and had therefore a tendency to create a famine in

India. If that were so, what conclusion should have been drawn from those figures? What he should have done was to see how far famine was promoted by that tremendous export. It certainly might have been expected that if there were a small famine in 1874, there would have been a very large one in 1883; but there was nothing of the kind. This showed how egregiously some gentlemen might be misled by studying figures *ad nauseam*. Again, they were told that the Indian railway system did not pay on a whole, and then that they paid $3\frac{1}{2}$ per cent. Were those statements consistent? Was Mr. Connell aware that the Indian Government could borrow in this country at par at $3\frac{1}{2}$ per cent., and that being so, they were surely entitled to come to the conclusion that the railway system paid. If this country with its enormous wealth and credit could give to that poor country railways at only a cost to that country of $3\frac{1}{2}$ per cent., he asked that Society and the whole world who had got the best of the bargain? He should say the Indian ryot had. Mr. Connell spoke of metalled roads, but was he aware that they cost in India 4*s*. a foot, or 1,200*l*. a mile; and when such roads were constructed, would they carry one-hundredth part of even a 3-foot gauge railway? The most recent instance of railway construction had been thirteen miles of railway within the municipality of Calcutta of 2-feet gauge, laid down by order of the municipality itself for the purpose of carrying iron pipes for their sewers; and so cheap had been the transit, the railway costing 350*l*. a mile, that in one year the cost had been saved in labour. Mr. Connell told them of the loss in exchange of the financial burdens of the State railways, but he said nothing about the improved value of the land along the railways. He had made a calculation, and found in round figures that the improvement in the value of the land along the Indian lines had been from 100 to 1,000 millions, and that the income from that land had increased from 1 million up to 10 millions a year. That was a pretty substantial gain by the construction of railways, but the whole of that had been left out of view. The actual result on the old carrying trade of India was shown by this fact, that instead of the horses being run off the roads by the railways, the Government price given for horses, in consequence of the general trade of India being improved by the railways, had gone up from something like 30*l*. to 55*l*. per horse. On the whole he thought this paper was a very able and advantageous one, especially at the present juncture of public affairs, because it reminded him of an old story told of an ancient order of Jesuits, who for the purpose of advertising the virtues of their order, employed one of their number to go about and abuse them.

Mr. Martin Wood said it had been his business to follow the railway question as an observer, and, to a certain extent, as a critic, since the time when the guarantee system in its simple form of 5 per cent. began to break down, and a new method had to be adopted. Much of Mr. Connell's argument towards discrediting the remunerative effect of Indian railways was derived from that older period, and the financial results of that wasteful guarantee

system. For instance, there was the debit of interest during construction, which he very properly applied to the aggregate profit on railways in India, dating back to the period when the guaranteed interest had to be made up from taxation. As to the excessive zeal for railway extension in India, there was a feeling abroad amongst some classes which was very well expressed in one of the weekly papers only last Saturday, to the effect that there are new fanatics who believe in railways and telegraphs, and other methods of hurrying civilisation, as they once used to believe in missionaries. It was exceedingly important that this aggregate estimate of the unlimited advantages of railways in India should be challenged as it had been by Mr. Connell. It would require a good deal of repetition of that kind of argument, and such statistics as were embodied in the paper, to check the superstition that prevailed in this country as to the absolute value of railways in India. That belief proceeded upon the fallacious comparison of this small island with its large population, mineral wealth and economic manufacturing industries, with the totally different industrial condition in India; and if that comparison was followed up and carefully gone into, it would be of immense service in showing the exact relative value of railways to India. The statistics of Indian railways was rather a formidable subject for persons to go into who had not approached it by degrees; but those who wished to do so would find great assistance from a pamphlet on Indian railways and wheat exports by Mr. Arthur Forde, an old member of the Institute of Engineers, published in Bombay. (The speaker exhibited a long sheet attached to Mr. Forde's pamphlet, which shows in diagrams the whole history and financial working of Indian railways.) Mr. Forde also showed on his map that the whole of the wheat exported from India had been grown on an area of 3,316 square miles; and as there was a million and a half square miles in India, they could form an idea of the relative area occupied by wheat. But the price of wheat having gone down, it no longer paid the Indian cultivator, hence the clamour here for more railways in order that it might be brought more cheaply to the ports. Whilst commending close attention to the adverse views stated in the paper, he certainly could not support Mr. Connell's final conclusions, although his facts must be taken into account. The effect of them was this, that the authorities and all concerned must exercise more discrimination and care in the way in which they extended the Indian railway system. That mode of treating the subject was illustrated by the judicious manner in which Sir James Caird in the letter that had been read introduced the discriminating element, and showed that while railways were useful for many districts in India, there are others where such expensive means are too costly. In comparing railways with other Indian public works it must be remembered that though railways carry food and produce and bring it rapidly to market, they would not make food grow or cause an increase in products suitable for export, whereas water would do that. As shown only incidentally in Mr. Connell's paper, the application of irrigation to ordinary soils would cause them to produce at least two or three times the amount obtained with

difficulty from dry soils. Wheat could not be so largely exported from India as is sometimes wished, because of the immense distances to be traversed, and the heavy cost of transit owing to the scarcity of fuel for the locomotives: but these distances and these bulky products could be provided for by cheap water navigation over a large part of India. He knew that this subject of inland navigation was not a popular one with English engineers; but depend upon it cheap water carriage and the storage of water for times of drought would go further than any other appliances to meet the wants of India, and contribute to the prosperity of the mass of the people.

Mr. Price-Williams said he had devoted a good deal of special attention to the question of railway economy, and he must say that when Mr. Connell advocated returning to locomotion on metal roads, and pointed to the advantage of slow transit, their experiences were entirely different. He had no knowledge of India, and when he found so eminent an authority as Sir James Caird agreeing with the author that the tendency of railways in certain parts of India has been possibly to drain away the country's resources, he felt bound to accept that view, but he could not help thinking that when it had been shown that so small an area as 3,000 square miles was all that was now devoted to wheat growing, and considering the great natural advantages that India with its tropical climate possessed as a wheat producing country, that difficulty might be overcome by the adoption of the recent great improvements in mechanical appliances for agricultural purposes. The author of the paper had omitted several important features in connection with railways: one was that the construction of a railway served not merely to drain away its resources but also to create and develop return traffic; traffic begets traffic, and he believed that a system of cheap railways such as he understood was being introduced in India, and carrying produce at the lowest possible rates consistent with a bare profit, would prove to be a very great boon to that country. In England it was held as an axiom that wherever a railway was made the annual value of land was thereby on an average increased 21*s.* 6*d.* an acre. The era of cheap railways was only beginning, and he believed that by the construction of light cheap railways, and the adoption of the numerous mechanical contrivances recently devised for economising labour, the present depression in agricultural districts in this country would be removed.

The President said he was sorry that the hour obliged them to bring the discussion to a close, but he was sure they would all thank Mr. Connell for having brought this subject before them and given them the opportunity of considering and discussing it. As they all had some influence more or less upon these questions as they came before the public, he hoped that that consideration would be turned to good account.

Mr. Connell in reply said there seemed to have been a most curious misconception of his meaning. The whole of his argument

was against State railways, but he had no objection to railways being introduced into India or anywhere else by private enterprise. It was all very well to say the State could take care that railways were put in the best places and not in the worst, but they knew the same care was not taken as where railways were built by private enterprise and that as a fact in India many of the railways which it was asserted were going to pay large dividends had not, and were not likely to do so. The State did not introduce railways into England, it was left to private enterprise, and if in India there was the large calling for railways that Mr. Kimber asserted there was, why did not private enterprise induce either native or English capitalists to build them without a guarantee? He was glad to see that Sir James Caird agreed with him as regards the less fertile parts of India, although he disagreed as to the fertile parts; he (Mr. Connell) could not see why the argument should not apply to both, and when Sir James said they might be built in the fertile parts, his reply was, how was it that private enterprise would not come forward and build them? He was asked whether he would prevent the improvement of communication between the producer and consumer. The whole point was what was the cost of bringing the producer into close relation with the consumer, because if the cost was very great and came back upon the Indian taxpayer and him only, that made all the difference in the world. Mr. Harris asked whether he was a free trader or a protectionist; he was a free trader, and certainly the whole of his argument was based upon the teaching of free trade as he conceived it. Mr. Harris seemed to think that irrigation in India was only canal irrigation, whereas the fact was that the greater part of the land was irrigated by wells, with which the State had never had anything to do; and where there was non-deltaic canal irrigation, it was very doubtful whether more harm than good was not done to the land. One evil result from the railways was the destruction of forests for railway fuel, which was something enormous, and he would ask gentlemen to read the third appendix of the famine report on that subject. There was no doubt that the destruction of forests in southern India had largely added to the famine area. He was asked what evidence there was of less variety of employment? He could only refer to Sir James Caird's report upon the condition of India, and to the famine report and Sir G. Birdwood's writings, but he should have thought it was notorious that an enormous number of weavers had been thrown on the land, and that many trades and arts had decayed. Wages had not increased in the agricultural districts, although food had become dearer. He did not assert that the export of wheat caused famine, but only that when the drought came there was less store to meet it. As a fact Sir James Caird pointed out in his book, "India, the Land and its People," that the scarcity in the Punjaub in 1878 was chiefly due to the high prices caused by the export of wheat to England, and the immigration of people fleeing from the famine in Cashmere. As to the comparative cost of roads and railways, there were three kinds of roads in India, the absolutely rough road, the second class, and the first class road. The first

class road no doubt cost about 1,200*l.* a mile, but a good cross country road cost about 500*l.* a mile, and these were the roads he was referring to. Mr. Kimber produced some estimates with regard to the improvement in the value of land. He felt that he (Mr. Connell) was at a disadvantage: he had to get at his facts by the most laborious and careful study of blue books of all sorts, but Mr. Kimber seemed to get at his by a flight of the imagination; what evidence had he to produce with regard to these enormously increased land values; and supposing they did increase, who would get the benefit? One argument in favour of the State construction of railways in India was that when the value of land was increased the State would be able to get an increased land tax. It was not the same as in England, where the agricultural classes got the advantage of increased value. He doubted whether on the whole India had derived any benefit from the State railways, though he perfectly agreed with his opponents that the advantage to England from the increase of India's foreign trade had been enormous.

[Note by Mr. Giffen. Having seen Mr. Harris's remarks with reference to my Inaugural Address in 1882, in which I made some observations on the increase of population in India, I wish to state that I do not consider the account given by Mr. Harris of what I said a correct one. I made no prediction as to the future in India, though I called attention to existing tendencies as appearing by the latest returns. Nor did I say what Mr. Harris appears to assume that I said as to the capacity of India for increased production. No one doubts the capacity of India for such increase, if the character of the population of India can only be changed. It is a different question how much production can be increased if the character of the population is not changed; while any improvement in the producing capacity will also be accompanied, it is probable, by an increase of the power of consumption, so that the problem of the increase of population in India appears in any view a serious one. It was this dilemma, in which we appear to be placed as governors of India, to which I wished to call attention.—R.G.]

MISCELLANEA.

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I.—*On the Relative Dangers of Coal and Metal Mining in the United Kingdom of Great Britain and Ireland. By* C. Le Neve Foster, B.A., D.Sc., F.G.S., *one of Her Majesty's Inspectors of Mines.*

[Read before Section F of the British Association at Montreal, 2nd September, 1884.]

It is generally assumed that the collier has a far more dangerous occupation than the metal miner, and it is not surprising that this idea should prevail when we know the sensation created throughout the country by bad explosions of fire-damp, with scores of victims at a time. Catastrophes of this kind rivet the attention of the public, who never hear of the smaller accidents which make up the bulk of the casualties both in coal and metal mines.

In former days metal mines were not subject to Government inspection, and no precise figures could be presented to the public; but since the passing of the two mining Acts in 1872, statistics of the accidents in metal mines, as well as in coal mines, have been published, and with the averages of ten years before us it is possible to make a comparison between the dangers of the two callings, coal and metal mining.

In the Blue Book entitled *Reports of the Inspectors of Mines for the Year 1883*, will be found a table (p. xvi) which gives the annual death-rates from accidents per 1,000 persons employed at workings under the Coal Mines Regulation Act, and at workings under the Metalliferous Mines Regulation Act. The average annual rate of mortality from accidents during the ten years 1874 to 1883 has been 2·238 per 1,000 persons employed in Great Britain and Ireland at mines under the former Act, and 1·645 at mines under the latter Act. Speaking roughly the relative amounts of danger would be as 3 to 2. Although the official figures are quite correct, they are capable of conveying a wrong impression; like other statistics they require to be read with discrimination. The possibility of an error is caused by the fact that the figures relate to persons employed, and accidents that have occurred, both below and above ground. Owing to the amount of labour required for "dressing" the ores, the proportion of surface hands is much larger at a tin, copper, or lead mine, than at a colliery. On an average only 20 per cent. of the persons employed at mines under the Coal Mines Regulation Act work above ground, and 80 per cent. underground; at mines under the Metalliferous Mines Act the proportions are 40 per cent. above ground, and 60 per cent.

underground. Consequently as the proportion of the surface hands with a small risk is twice as great in one case as in the other, it is impossible properly to compare the risks of the underground workers until this source of error has been eliminated. The figures required for calculating the death-rates of the underground workers separately will be found in the Blue Book just referred to (pp. vii, xv, and xvi), and in the corresponding Blue Book for1882 (p. xxxvi).

During the ten years 1874 to 1884, at mines under the Coal Mines Regulation Act there were altogether 10,337 deaths from accidents underground, with an annual average of 404,169 persons employed underground; this means an annual average death-rate of 2·552 per 1,000. At the mines under the Metalliferous Mines Regulation Act, during the same period, there were 778 persons killed by accidents underground, with an average annual underground working population of 32,567 persons; consequently the death-rate was 2·389. Therefore the difference is only 0·163 per 1,000, and the relative amounts of danger would be as 51 to 47, a very different proportion from 3 to 2 as appeared to be the case at a first glance. The ratio may also be expressed by saying that, supposing the numbers of persons employed to be equal, for every 100 killed by accidents underground at mines under the Coal Mines Act, there would be 93·6 killed at mines under the Metalliferous Mines Act. The difference in risk is therefore much smaller than is generally supposed.

The necessity for considering the underground death-rate separately when inquiring into the relative amounts of danger at different classes of mines is well illustrated in the case of the underground slate quarries of North Wales.* These appear to be less dangerous than collieries or more dangerous, according as the surface hands and accidents are included in or excluded from the calculations. In the former case the average annual death-rate for the nine years 1875 to 1883 is 1·99 per 1,000, as compared with 2·238 per 1,000; in the latter case it reaches 3·07 as compared with 2·552 per 1,000. Consequently the underground slate-quarrier has a more dangerous occupation than the average collier.

While correcting one misapprehension I must guard against another, and point out that the Coal Mines Regulation Act applies to mines of coal, stratified ironstone, shale, and fireclay. Therefore the figures given do not refer solely to coal mines, and do not represent precisely the risks of the collier, and it becomes necessary to examine whether the introduction of certain disturbing elements affects the average risk to any great extent or not. Compared with the coal the amounts of fireclay, ironstone, and shale are small, and the total quantity of these three minerals raised in 1883 was less than one-tenth of the weight of the coal; any error caused by the introduction of ironstone and other mines is likely therefore to be inconsiderable. After coal the most important mineral wrought under the Coal Mines Act is ironstone, and more than half of the total quantity raised is obtained in the Cleveland district. From

* Reports of the Inspectors of Mines for 1883, p. 201.

the figures given in the reports of the inspectors of mines, I find that from 1874 to 1883 there were 186 deaths from accidents underground in the Cleveland district, with an average annual underground staff of 6,853 persons, consequently the average death-rate has been 2·72 per 1,000, which is higher than the average 2·55 for all the mines under the Coal Mines Act. Therefore if all the disturbing factors were eliminated, we may fairly assume that the average underground death-rate at the coal mines proper would not exceed 2·55 per 1,000.

On the other hand I must remark that the Metalliferous Mines Regulation Act applies to all mines not included under the Coal Mines Act, and the statistics under the former Act refer not only to mines worked for metalliferous ores, but also to salt mines and underground slate and stone quarries. The figures quoted cannot be taken as relating strictly to true metalliferous mines only.

For the sake of comparison I have extracted from the annual reports of the inspectors of mines, the figures for the metalliferous mining districts of Cornwall and Devon, including also a few mines in Somersetshire and Dorsetshire. During the eleven years 1873 to 1883 there were 316 deaths from accidents underground, with an average underground staff of 10,489 persons. This means an average annual death-rate among the underground workers of 2·73 per 1,000.

The conclusions arrived at from these statistics are, firstly, that the mines under the Coal Mines Regulation Act are not much more destructive of life than the mines under the Metalliferous Mines Regulation Act; and secondly, that certain mines worked for metals such as the Cleveland ironstone mines, and the tin and copper mines of Cornwall and Devon, present more dangers to the underground worker than an average colliery, in spite of the almost complete absence of explosions of gas. In other words, fire-damp is not the worst enemy the miner has to contend with. The accompanying table shows that falls of roof and sides are far more fatal in their results, and cause 40 per cent. of the deaths at coal mines and 35½ per cent. of the deaths at metal mines.

Cause.	Ten Years 1874 to 1883 inclusive.			
	Mines in the United Kingdom under the Coal Mines Regulation Act.		Mines in the United Kingdom under the Metalliferous Mines Regulation Act.	
	Total Number of Deaths by Accidents.	Percentage of the Total Number of Deaths.	Total Number of Deaths by Accidents.	Percentage of the Total Number of Deaths.
Explosions of fire-damp	2,663	23·6	—	—
Fall of roof and sides	4,513	40·0	317	35·5
Shaft accidents	1,229	10·9	238	26·7
Miscellaneous, underground	1,932	17·1	223	25·0
,, on surface	942	8·3	113	12·7
Total	11,279	99·9	891	99·9

II.—1. *A Table showing the Number of Wrecks and Casualties to Sailing Vessels and Annual Total compared with the Average Number*

Sailing Vessels.	First Half-Year.		Second Half-Year.		Annual Total.			
	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.		Average 18 previous Years.	
					Number.	Per Cent.	Number.	Per Cent.
1. *Missing*	64	59	17	28	81	1·07	87	0·83
2. *Abandoned*—								
Recovered	26	31	18	42	44	0·58	73	0·7
Lost	82	113	55	127	137	1·81	240	2·28
Total	108	144	73	169	181	2·39	313	2·98
3. *Collision*—								
Not damaged	185	226	201	289	386	5·1	515	4·89
Damaged	381	546	422	642	803	10·62	1,188	11·29
Sunk	78	75	93	85	171	2·26	160	1·52
Total	644	847	716	1,016	1,360	17·98	1,863	17·7
4. Sinking from causes other than collision	110	146	93	172	203	2·68	319	3·03
5. *Stranded*—								
Got off	617	693	589	767	1,206	15·94	1,460	13·87
Not got off	337	458	373	613	710	9·39	1,071	10·18
Subsequent fate not reported	129	104	129	156	258	3·41	261	2·48
Total	1,083	1,255	1,091	1,537	2,174	28·74	2,792	26·53
6. Capture	—	2	—	6	—	—	8	0·08
7. Piracy	—	1	—	1	—	—	3	0·03
8. Burnt or on fire	47	63	82	73	129	1·7	136	1·3
9. Dismasted or disabled	154	187	121	264	275	3·64	452	4·3
10. Jettison of cargo under deck	76	93	53	87	129	1·7	180	1·71
11. Jettison of deckload	60	58	100	130	160	2·11	188	1·74
12. Leaky	353	495	372	620	725	9·58	1,115	10·6
13. Loss of anchors or chains	144	218	141	265	285	3·77	485	4·59
14. Machinery damaged, &c.	—	—	—	—	—	—	—	—
15. Mutiny, sickness, &c.	39	106	53	104	92	1·22	210	2·0
16. Ship damaged, &c.	938	1,091	822	1,256	1,760	23·27	2,347	22·3
17. Water-logged	3	9	8	18	11	0·15	27	0·26
Number of casualties	3,823	4,775	3,742	5,750	7,565	—	10,525	—
,, vessels	3,614	4,458	3,569	5,388	7,183	—	9,846	—

Steamers reported in "Lloyd's List," during the Year 1884, *and the Percentages of the and Percentages for the Eighteen Previous Years.*

First Half-Year.		Second Half-Year.		Annual Total.				Steamers.
1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.		Average 18 previous Years.		
				Number.	Per Cent.	Number.	Per Cent.	
6	8	2	3	8	0·2	11	0·46	1. *Missing*
								2. *Abandoned*—
2	1	1	—	3	0·08	1	0·04	Recovered
2	2	—	2	2	0·05	4	0·17	Lost
4	3	1	2	5	0·13	5	0·21	Total
								3. *Collision*—
257	163	258	212	515	13·12	376	15·44	Not damaged
222	141	225	176	447	11·39	316	13·01	Damaged
26	14	37	18	63	1·6	32	1·32	Sunk
505	318	520	406	1,025	26·11	724	29·77	Total
26	23	43	30	69	1·76	53	2·16	4. Sinking from causes other than collision
								5. *Stranded*—
478	240	474	271	952	24·25	511	21·0	Got off
61	38	67	52	128	3·26	90	3·72	Not got off
1	9	2	10	3	0·08	20	0·8	Subsequent fate not reported
540	287	543	333	1,083	27·59	621	25·52	Total
—	—	—	—	—	—	—	—	6. Capture
—	—	—	—	—	—	—	—	7. Piracy
60	28	53	34	113	2·88	62	2·56	8. Burnt or on fire
11	9	6	11	17	0·43	20	0·82	9. Dismasted or disabled
43	25	32	21	75	1·91	46	1·87	10. Jettison of cargo under deck
12	9	27	16	39	0·99	25	1·02	11. Jettison of deckload
32	29	26	28	58	1·48	56	2·31	12. Leaky
18	13	8	13	26	0·66	27	1·09	13. Loss of anchors or chains
378	210	430	235	808	20·59	445	18·29	14. Machinery damaged, &c.
3	9	6	9	9	0·23	18	0·76	15. Mutiny, sickness, &c.
309	158	281	161	590	15·03	318	13·13	16. Ship damaged, &c.
—	—	—	—	—	—	—	—	17. Water-logged
1,947	1,128	1,978	1,303	3,925	—	2,432	—	Number of casualties
1,914	1,087	1,953	1,271	3,867	—	2,359	—	„ vessels

2.—*A Table showing the Results of Wrecks and Casualties to Ship and to Cargo, with List," during the Year* 1884, *with the Percentages of the Annual Total com-*

Sailing Vessels.	First Half-Year.		Second Half-Year.		Annual Total.			
	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.		Average 18 previous Years.	
					Number.	Per Cent.	Number.	Per Cent.
Results to Ship—								
Total loss	660	821	629	1,014	1,289	17·95	1,836	18·65
Constructive loss	26	80	10	71	36	0·5	151	1·54
Great damage	379	456	291	588	670	9·33	1,044	10·61
Minor damage	1,719	2,111	1,705	2,493	3,424	47·67	4,604	46·76
Raised after sinking	29	22	23	18	52	0·72	41	0·41
Not damaged or results unknown	801	967	911	1,203	1,712	23·83	2,169	22·03
Total	3,614	4,458	3,569	5,388	7,183	—	9,846	—
Results to Cargo so far as reported—								
All lost	297	443	206	476	503	7·0	919	9·33
Part lost	189	233	192	300	381	5·3	533	5·41
All saved	4	15	9	14	13	0·18	30	0·31
Forwarded	10	14	9	8	19	0·26	22	0·22
Heated	2	9	8	8	10	0·15	17	0·17
Shifted	42	58	38	66	80	1·11	124	1·26
Otherwise damaged	64	85	72	77	136	1·89	163	1·66
Salvage Services	232	398	209	463	441	6·14	862	8·76
Lives—								
Crews saved	392	444	387	544	779	10·84	988	10·04
Crews drowned	78	60	37	45	115	1·60	105	1·07
Lives lost so far as reported (in both ships and steamers)	776	925	672	850	1,448	—	1,775	—

Salvage Services, Crews Saved or Drowned and Lives Lost, so far as reported in "Lloyd's pared with the Average Number and Percentage for the Eighteen Previous Years.

First Half-Year.		Second Half-Year.		Annual Total.				Steamers.
1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.		Average 18 previous Years.		
				Number.	Per Cent.	Number.	Per Cent.	
								Results to Ship—
123	79	138	100	261	6·75	179	7·58	Total loss
—	4	—	3	—	—	7	0·28	Constructive loss
104	67	93	86	197	5·09	153	6·49	Great damage
967	508	918	563	1,885	48·75	1,070	45·39	Minor damage
6	9	18	9	24	0·62	18	0·77	Raised after sinking
714	420	786	511	1,500	38·79	932	39·49	Not damaged or results unknown
1,914	1,087	1,953	1,271	3,867	—	2,359	—	Total
								Results to Cargo so far as reported—
50	34	52	36	102	2·64	70	2·96	All lost
77	52	83	56	160	4·14	113	4·77	Part lost
2	1	—	1	2	0·05	3	0·11	All saved
4	1	—	1	4	0·1	2	0·08	Forwarded
2	1	1	1	3	0·08	2	0·1	Heated
25	16	28	20	53	1·37	35	1·5	Shifted
55	29	60	35	115	2·97	64	2·7	Otherwise damaged
140	81	97	86	237	6·13	166	7·05	*Salvage Services*
								Lives—
73	39	83	44	156	4·03	83	3·53	Crews saved
6	7	5	4	11	0·28	11	0·48	Crews drowned
—	—	—	—	—	—	—	—	Lives lost so far as reported (in both ships and steamers)

3.—*A Table showing the Number of Wrecks and Casualties to Sailing Vessels and Steamers Average Number for the same period*

Sailing Vessels.	First Quarter.		Second Quarter.		Third Quarter.		Fourth Quarter.	
	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.
1. *Missing*	33	29	31	29	7	14	10	14
2. *Abandoned*—								
Recovered	17	19	9	12	5	11	13	31
Lost	60	68	22	45	22	33	33	94
Total	77	87	31	57	27	44	46	125
3. *Collision*—								
Not damaged	116	135	69	90	68	112	133	177
Damaged	237	335	144	212	173	245	249	397
Sunk	44	43	34	31	44	34	49	51
Total	397	513	247	333	285	391	431	625
4. Sinking from causes other than collision	68	81	42	65	41	66	52	107
5. *Stranded*—								
Got off	378	397	239	296	265	288	324	480
Not got off	225	292	112	167	113	177	260	436
Subsequent fate not reported	89	69	40	34	51	43	78	113
Total	692	758	391	497	429	508	662	1,028
6. Capture	—	1	—	1	—	2	—	4
7. Piracy	—	1	—	1	—	1	—	—
8. Burnt or on fire	25	35	22	28	33	31	49	42
9. Dismasted or disabled	114	110	40	77	41	93	80	171
10. Jettison of cargo under deck	50	60	26	33	22	29	31	58
11. Jettison of deckload	44	37	16	21	25	23	75	107
12. Leaky	219	308	134	187	145	230	227	390
13. Loss of anchor or chains	131	170	13	48	13	48	128	218
14. Machinery damaged, &c.	—	—	—	—	—	—	—	—
15. Mutiny, sickness, &c.	26	65	13	41	23	43	30	61
16. Ship damaged, &c.	700	739	238	352	241	357	581	899
17. Water-logged	1	5	2	5	1	6	7	12
Number of casualties	2,577	3,000	1,246	1,773	1,333	1,888	2,409	3,862
Number of vessels	2,427	2,773	1,187	1,684	1,288	1,803	2,281	3,585

reported in "Lloyd's List," during the Four Quarters of the Year 1884, *compared with the of the Eighteen Previous Years.*

First Quarter.		Second Quarter.		Third Quarter.		Fourth Quarter.		Steamers.
1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	
6	5	—	3	—	1	2	3	1. *Missing*
1	—	1	—	—	—	1	—	2. *Abandoned*—
2	1	—	1	—	1	—	1	Recovered Lost
3	2	1	1	—	1	1	2	Total
171	90	86	73	106	88	152	124	3. *Collision*—
128	84	94	56	96	71	129	104	Not damaged
12	8	14	6	18	8	19	10	Damaged Sunk
311	183	194	135	220	167	300	238	Total
10	13	16	10	20	11	23	19	4. Sinking from causes other than collision
282	132	196	107	238	109	236	162	5. *Stranded*—
37	22	24	16	25	18	42	34	Got off Not got off
1	6	—	4	1	3	1	7	Subsequent fate not reported
320	160	220	127	264	130	279	203	Total
—	—	—	—	—	—	—	1	6. Capture
—	—	—	—	—	—	—	—	7. Piracy
29	14	31	14	23	15	30	19	8. Burnt or on fire
10	6	1	3	1	3	5	8	9. Dismasted or disabled
28	13	15	12	18	8	14	13	10. Jettison of cargo under deck
7	7	5	2	8	3	19	13	11. Jettison of deckload
16	17	16	12	11	10	15	17	12. Leaky
16	10	2	3	3	3	5	10	13. Loss of anchor or chains
199	115	179	95	174	100	256	135	14. Machinery damaged,&c.
3	5	—	4	1	5	5	5	15. Mutiny, sickness, &c.
231	109	78	48	81	37	200	124	16. Ship damaged, &c.
—	—	—	—	—	—	—	—	17. Water-logged
1,189	658	758	470	824	495	1,154	809	Number of casualties
1,173	637	741	451	814	483	1,139	788	Number of vessels

4.—*A Table showing the Results of Wrecks and Casualties to Ship and Cargo, with List," during the Four Quarters of* 1884, *compared with the Average*

Sailing Vessels.	First Quarter.		Second Quarter.		Third Quarter.		Fourth Quarter.	
	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.
Results to Ship—								
Total loss	423	496	237	326	216	320	413	694
Constructive loss	17	47	9	33	4	34	6	37
Great damage	265	283	114	173	109	199	182	389
Minor damage	1,203	1,368	516	743	584	804	1,121	1,689
Raised after sinking	16	13	13	10	17	9	6	10
Not damaged or results unknown	503	566	298	400	358	437	553	766
Total	2,427	2,773	1,187	1,684	1,288	1,803	2,281	3,585
Results to Cargo so far as reported—								
All lost	186	278	112	165	78	152	128	325
Part lost	137	146	52	31	63	84	129	215
All saved	1	11	3	5	3	5	6	10
Forwarded	4	9	6	5	2	4	7	4
Heated	1	6	1	2	1	4	7	5
Shifted	30	39	12	20	14	16	24	49
Otherwise damaged	32	49	32	36	33	35	39	42
Salvage services	167	258	65	140	64	149	145	314
Lives—								
Crews saved	265	274	127	171	143	167	244	376
Crews drowned	48	31	30	24	10	14	27	31
Lives lost so far as reported (in both ships and steamers)	376	459	400	466	365	275	307	575

Salvage Services, Crews Saved or Drowned and Lives Lost, so far as reported in "Lloyd's Number for the same period of the Eighteen Previous Years.

First Quarter.		Second Quarter.		Third Quarter.		Fourth Quarter.		Steamers.
1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	1884.	Average 18 previous Years.	
								Results to Ship—
66	46	57	33	61	36	77	64	Total loss
—	2	—	1	—	1	—	1	Constructive loss
68	38	36	29	43	33	50	52	Great damage
592	305	375	203	367	209	551	353	Minor damage
2	5	4	4	5	4	13	6	Raised after sinking
445	240	269	181	338	200	448	312	Not damaged or results unknown
1,173	637	741	451	814	483	1,139	788	Total
								Results to Cargo so far as reported—
27	21	23	13	25	14	27	22	All lost
47	29	30	23	37	21	46	40	Part lost
2	1	—	1	—	—	—	1	All saved
1	1	3	—	—	—	—	—	Forwarded
2	1	—	—	—	1	1	1	Heated
21	12	4	4	7	3	21	17	Shifted
33	16	22	13	23	14	37	22	Otherwise damaged
74	43	66	36	48	36	49	50	Salvage services
								Lives—
41	23	32	17	46	17	37	27	Crews saved
6	5	—	2	—	1	5	3	Crews drowned
—	—	—	—	—	—	—	—	Lives lost so far as reported (in both ships and steamers)

III.—*Statistical Results of the last Census of France, Prussia, Austria, Italy, Switzerland, and Belgium.*

An interesting paper by M. Toussaint Loua, dealing with the final results of the last census taken in France, Prussia, Austria, Italy, Switzerland, and Belgium, has recently been published in the Journal of the Paris Statistical Society, and M. Loua calls attention to the extreme importance both to the statistician and the economist of the population question generally, and he also points out the considerable advantage that would be derived from the introduction of uniformity and general method in the compilation of the census returns of the various European States.

Commencing with France, M. Loua states that the ascertained number of the population, including those temporarily absent from home, according to the last census, which was taken on the 18th December, 1881, was 37,672,048; which in relation to the area, amounting to 204,031 square miles, gave a proportion of 184·0 per square mile; but if only the number of those actually in the country at the period of the enumeration be taken into account, we find that it amounted to 37,405,290 persons.

As regards the number of separate households, it is acknowledged that in dealing with a census, by the term household, is understood the collection of individuals married or not married, with or without children, occupying a separate dwelling. The number of households therefore in France amounted to 10,399,885; from which we gather that there are 3·50 inhabitants to a household, distributed among 7,609,464 houses or dwellings, comprising 10,729,826 sets of apartments, of which 380,468 were unoccupied. In regard to nationality and extraction the population of France is thus divided:—

Born in France or naturalised	36,404,200	or 97·3 per cent.
Foreigners	1,001,090	„ 2·7 „
	37,405,290	„ 100·0

The foreigners are of every nationality, the neighbouring countries as a rule furnishing the largest proportion. There were actually in the country at the time of the enumeration 374,498 Belgians, 165,313 Italians, 62,437 Spaniards, 59,028 Germans, 50,203 Swiss, 30,077 English, 21,232 Dutch, 12,090 Austrians, 10,489 Russians; the remainder being made up of Swedes, Norwegians, Danes, Greeks, Turks, and Egyptians, Roumanians, Servians, Bulgarians, Montenegrins, and Asiatics.

The average proportion of the sexes was as follows: males 49·9, females 50·1; the actual numbers being respectively 18,656,518, and 18,748,772. As regards the civil condition and age, the following tables will show the composition of the French population:—

	Males.	Females.	Total.	Proportion per Cent.
Children*	6,032,862	4,951,111	10,983,973	29·3
Unmarried adults	4,077,739	4,329,751	8,407,490	22·5
Married	7,520,186	7,503,353	15,023,539	40·2
Widowed	1,025,731	1,964,557	2,990,288	8·0
Total	18,656,518	18,748,772	37,405,290	100·0

* Girls under the age of 15, and boys under 18, are included in this category.

Age Periods.	Males.	Females.	Total.
Up to 5 years	1,741,629	1,711,623	3,453,252
5 „ 10	1,715,362	1,686,848	3,402,210
10 „ 15	1,589,491	1,552,643	3,142,134
15 „ 20	1,630,830	1,613,248	3,244,078
20 „ 25	1,631,812	1,747,972	3,379,784
25 „ 30	1,295,149	1,255,537	2,550,686
30 „ 35	1,315,636	1,292,501	2,608,137
35 „ 40	1,281,868	1,254,102	2,535,970
40 „ 45	1,204,397	1,189,114	2,393,511
45 „ 50	1,106,866	1,121,328	2,228,194
50 „ 55	1,608,285	1,035,747	2,044,032
55 „ 60	891,461	916,384	1,807,845
60 „ 65	781,620	792,830	1,594,450
65 „ 70	604,620	635,448	1,240,068
70 „ 75	427,868	450,437	878,305
75 „ 80	250,331	276,357	526,688
80 „ 85	123,625	143,347	266,972
85 „ 90	40,676	51,973	92,649
90 „ 95	7,929	13,259	21,188
95 „ 100	1,216	2,622	3,838
100 and above	.97	177	274
Age unknown	5,570	5,275	11,025
	18,656,518	18,748,772	37,405,290

M. Loua states that the official returns from which he quotes contain an interesting diagram showing in a very clear and comprehensive manner the distribution of the population according to age and civil status, and in examining this diagram he was struck by the falling off in the number of the population comprised in the age period 10—15, chiefly due in his opinion to the excessive infantile mortality during the year 1871, and also by the abnormally large number of females returned as being between the ages of 20 and 25, which he attributes to the fact that many women, desirous of being thought to be younger than they really are, return themselves as under 25, when their true age is even considerably beyond this limit.

In examining that important part of the census which treats of the distribution of the population according to occupations, we find

that the figures prepared on this head have been treated in such a way as to show the number of individuals of each sex directly engaged in a given quality of occupation, either as chiefs of establishments, heads of houses, or paid servants, whether clerks or artisans, and the number of individuals of each sex (wife or husband, father or mother, relations of all degrees and servants) dependent upon the former.

The following table will show the distribution of the population according to the larger groups of occupations :—

	Population.			Proportional Distribution.
	Males.	Females.	Total.	
Agriculture	9,156,873	9,092,336	18,249,209	50·03
Industry	4,646,978	4,677,129	9,324,107	25·56
Commerce	1,891,200	1,952,247	3,843,447	10·53
Transport	443,818	356,923	800,741	2·20
Army and navy	469,689	83,162	552,851	1·52
Liberal professions	772,695	818,663	1,585,358	4·35
Persons living exclusively on their incomes	871,507	1,246,666	2,121,173	5·81
Total	18,252,760	18,224,126	36,476,886	100·00
Population not classed	335,561	401,527	737,088	—
Occupation unknown	68,197	123,119	191,316	—
	18,656,518	18,748,772	37,405,290	—

With regard to the active and non active elements, meaning by the latter those persons who as families or domestic servants are dependent upon the former, the following is the distribution :—

Active Population (40 *per Cent.*).

Heads of houses, &c.	8,334,372
Clerks	1,040,457
Artisans and journeymen	5,533,323
	14,908,152

Inactive Population (60 *per Cent.*).

Families	19,011,468
Domestic servants	2,557,266
	21,568,734

In Prussia the superficial area is 134,427 square miles, and it was found that the total resident population according to the last census, taken on the 1st December, 1880, amounted to 27,279,111 ; the density of the population therefore being established at the rate of 202·9 per square mile. But this proportion necessarily varies

very considerably with the district; for example, at Berlin it is at the rate of 47,020·0; while in Pomerania it is as low as 132·1 per square mile. The average proportion of the sexes was as follows: males 13,414,866, females 13,864,245; the proportion of females to males being therefore in the ratio of 103 to 100; while as regards the number of households in Prussia, it amounted to 5,744,892 or an average of 4·90 persons to one family, distributed among 3,131,665 dwellings.

In regard to extraction and nationality the population of Prussia is thus divided:—

Born in Prussia	26,535,563
„ in other German States	526,037
„ abroad	212,021
„ at sea	55
Origin unknown	5,435
Total	27,279,111

The foreign element is composed of persons of every nationality; Russians, Austrians, Dutch, and Danes being the most largely represented; the numbers amounting respectively to 50,737, 50,383, 38,808, and 20,363; while the United Kingdom is only represented by a total of 7,288, Sweden by 7,468, America 5,683, Belgium 6,299, France 4,365, and Switzerland by 5,791.

The classification of the population according to the various creeds is as follows:—

Christians	26,891,787
Jews	363,790
Others	285
Unknown	1,243
No religious profession	22,006
Total	27,279,111

A reference to the tables given below will show the composition according to sex, civil status, and age:—

	Males.	Females.	Total.	Proportion per Cent.
Children and unmarried adults	8,382,475	8,036,029	16,418,504	60
Married	4,601,924	4,631,620	9,233,544	34
Widowed or divorced*	430,467	1,196,596	1,627,063	6
	13,414,866	13,864,245	27,279,111	100

* In this category are included 37,320 divorced persons; males 12,374, and females 24,946.

Age Periods.	Males.	Females.	Total.
Up to 5 years of age	1,911,452	1,887,980	3,799,432
5 „ 10	1,576,828	1,566,686	3,143,514
10 „ 15	1,432,286	1,414,275	2,846,561
15 „ 20	1,302,569	1,308,063	2,610,632
20 „ 25	1,155,091	1,217,401	2,372,492
25 „ 30	997,600	1,037,404	2,035,004
30 „ 35	899,929	946,383	1,846,312
35 „ 40	807,064	842,495	1,649,559
40 „ 45	733,932	778,381	1,512,313
45 „ 50	613,892	643,597	1,257,489
50 „ 55	534,126	587,123	1,121,249
55 „ 60	475,739	521,573	997,312
60 „ 65	393,919	439,181	833,100
65 „ 70	260,091	293,848	553,939
70 „ 75	156,929	183,525	340,454
75 „ 80	87,848	104,597	192,445
80 „ 85	34,820	43,814	78,634
85 „ 90	9,148	12,666	21,814
90 „ 95	1,705	2,803	4,508
95 „ 100	320	527	847
100 and above	128	231	359
Age unknown.....	29,450	31,692	61,142
	13,414,866	13,864,245	27,279,111

M. Loua in concluding his review of the results of the Prussian census, says that a comparison of the figures returned in 1875 with those in 1880, shows a decrease of population between the two census periods of 303,816 persons, after adding to the former the number of births and deducting the deaths, and this number represents the excess of emigration over immigration during the intervening period. He also draws attention to the very excellent diagrams attached to the official returns of the last census, and notices the same phenomenon in the diagram representing the distribution of the population according to age as he observed in the French return, namely, the marked decline in the number of births during the year 1871, thus affording conclusive evidence that this fatal year was as disastrous in its effects to the Prussian as to the French population.

The returns of the Austrian census, which was taken on the 31st December, 1880, have been recently published, says M. Loua, in five large volumes; the first of which deals with the dwelling places, families, and the numbers of the population classified according to extraction and nationality; the second treats of the distribution according to religious denomination and the degree of education, and has an appendix relating to the statistics of the blind, deaf and dumb, and insane; the third shows the composition of the population according to profession; the fourth the distribution of the population according to age and civil condition; and the fifth deals with the question of the number of live stock. According to these returns the total number of persons inhabiting the country at the date of the last enumeration was 22,144,244, as compared with 20,399,580 returned at the census of 1869; an increase of 1,744,664 persons, or an annual increase of 0·77 per

cent. This number is made up as follows: males 10,819,737, and females 11,324,507; the proportion of females to males being represented in the ratio of 105 to 100. The number of houses was 3,147,902, of which 2,995,577 were inhabited, and 152,235 uninhabited; and the number of families was returned as 4,760538; thus giving a proportion of 4·65 persons to each household.

As regards the place of birth, the Austrian population is divided as follows:—

Born in the commune where they reside	15,437,343
„ other departments	6,356,885
„ Hungary	183,422
„ Bosnia and Herzegovina.....	1,087
„ abroad	165,504
Total	22,144,244

The following tables will show the classification of the population according to religion and the degree of instruction:—

Religion.	Number.	Religion.	Number.
Roman Catholic	17,693,648	Mennonite	731
Greek Church	3,025,411	Unitarian	169
Armenian	4,308	Jewish	1,005,394
Old Catholic	6,134	Mahometan	49
Lutheran	289,005	Other	4,888
Calvinist	110,525	Unknown	3,333
Anglican	1,049		

Degree of Education.	Males.	Females.	Total.
Able to read and write	5,640,439	5,289,660	10,930,099
„ only	501,777	844,004	1,345,781
Unable to read or write	4,677,521	5,190,843	9,868,364
	10,819,737	11,324,507	22,144,244

It results from the above that 50 per cent. of the aggregate population are able to read and write, or at least to read. The numbers of the blind, deaf and dumb, and insane, were respectively 20,094, 28,958, and 45,529. Coming next to the question of the classification of the population by occupations, M. Loua states that the system adopted in Austria is identical with that employed in the French returns since 1866, and on this basis the following summary has been prepared:—

	Males.	Females.	Total.
Agriculture	5,856,865	6,335,131	12,191,996
Industry and commerce	3,063,762	2,846,337	5,910,099
Transport	186,993	171,826	358,819
Army	167,992	16,911	184,903
Liberal professions	376,488	391,236	767,724
Persons living exclusively on their incomes.....	291,949	435,324	727,273
Population not classed	874,010	1,129,420	2,993,430
	10,818,059	11,326,185	22,144,244

As regards the civil condition and the ages of the Austrian population, the following tables will show the relative distribution:—

	Males.	Females.	Total.	Proportion per Cent.
Children and unmarried adults	6,655,529	6,535,804	13,191,333	59·6
Married	3,844,680	3,867,777	7,712,457	34·8
Widowed	315,232	915,003	1,230,235	5·6
Divorced	4,296	5,923	10,219	
Total	10,819,737	11,324,507	22,144,244	100·0

Age Periods.	Males.	Females.	Total.
Up to 5 years	1,449,169	1,465,661	2,914,830
5 „ 10	1,208,605	1,213,091	2,421,696
10 „ 15	1,089,891	1,101,790	2,191,681
15 „ 20	1,021,220	1,064,966	2,086,186
20 „ 25	950,911	994,385	1,945,296
25 „ 30	800,924	842,596	1,643,520
30 „ 35	741,858	791,356	1,533,214
35 „ 40	698,668	737,425	1,436,093
40 „ 45	641,890	693,156	1,335,046
45 „ 50	538,156	577,202	1,115,358
50 „ 55	465,123	533,043	998,166
55 „ 60	399,465	440,855	840,330
60 „ 65	341,702	371,009	712,711
65 „ 70	227,929	237,215	465,144
70 „ 75	137,626	147,259	284,885
75 „ 80	70,578	73,099	143,677
80 „ 85	27,220	29,337	56,557
85 „ 90	9,983	8,422	15,405
90 „ 95	1,446	2,072	3,518
95 „ 100	295	418	713
100 and above	78	150	218
Total	10,819,737	11,324,507	22,144,244

A cattle census, as we have already pointed out, was also taken in Austria on 31st December, 1880, and the results showed that the number of live stock then in the country was as follows:—

Horses	1,436,282	Sheep	3,841,340
Asses and mules	49,618	Goats	1,006,675
Cattle	8,584,077	Pigs	2,721,541

The population of the kingdom of Italy was, according to the census returns for December 1881, 28,459,628; of whom 14,265,383 were males, and 14,194,245 females, or a proportion of 100·5 males to every 100 females. The general totals were as follows: unmarried males and children 8,544,448, unmarried females and children 7,660,923; married males 5,149,721, married females

5,211,318, widowers 571,214, and widows 1,322,004. As regards the educational state of the country the number of males able to read and write amounted to 5,389,451, females 3,345,370; of males able to read only 169,807, and females 413,843, while there were 8,706,125 males and 10,435,032 females unable either to read or write. The degree of education varies very considerably in the different districts, for while we find in Sicily that 84 per cent. of the population were totally uneducated, this proportion is as low as 41·9 in Piedmont. It may be taken generally that in the central and southern provinces of Italy education is more neglected than in the north.

Coming next to the return of the Swiss census taken on 1st December, 1880, the total population at that date was 2,846,102, distributed over 15,435 square miles, thus giving a density of 178·8 to the square mile; and this number was made up of 875,678 unmarried males and children, and 860,343 unmarried females and children, 458,139 married males, and 46,998 married females, 60,809 widowers and divorced men, and 130,135 widows and divorced women, or a proportion of 61 per cent. children and unmarried adults, 32·3 per cent. married persons, and 6·7 per cent. widowed and divorced.

In Switzerland therefore it will be seen that the number of females exceeds the number of males, the exact proportion being 104 females to every 100 males. The following table will show the distribution of the population according to age:—

Age Periods.	Males.	Females.	Total.
Up to 5 years	167,323	167,232	334,555
5 „ 10	149,900	149,325	299,225
10 „ 15	136,924	137,564	274,488
15 „ 20	134,282	135,470	269,752
20 „ 25	114,039	122,261	236,300
25 „ 30	97,775	101,307	199,082
30 „ 35	94,500	99,445	193,945
35 „ 40	94,020	98,218	192,238
40 „ 45	85,619	91,176	176,795
45 „ 50	74,926	79,410	154,336
50 „ 55	67,932	74,246	142,178
55 „ 60	57,838	63,854	121,692
60 „ 65	44,149	49,961	94,110
65 „ 70	33,806	37,028	70,834
70 „ 75	22,566	24,829	47,395
75 „ 80	12,809	13,663	26,472
80 „ 85	4,782	5,050	9,832
85 „ 90	1,213	1,222	2,435
90 „ 95	203	189	392
95 „ 100	20	24	44
100 and above	—	2	2
	1,394,626	1,451,476	2,846,102

M. Loua says that the manner in which the Swiss census returns are compiled precludes the possibility of producing any statement

showing the classification of the population by occupations, the information given on this head not being of a sufficiently detailed character to enable any reliable or accurate deduction to be drawn from it.

In Belgium the census enumeration was taken on the 31st December, 1880, on a plan substantially the same as that adopted in France, by which information was obtained as to the exact numbers of the population actually in the country at the time of the enumeration or temporarily absent from home, and the numerical strength was 5,520,009, as compared with 5,336,185 in 1876, 4,827,833 in 1866, 4,529,560 in 1856, and 4,337,196 in 1846. The total superficies of the country is stated to be 11,370 square miles, making the mean population 487 to the square mile. The number of dwellings amounted to 1,127,322, of which 65,240 were unoccupied; and we gather from this that there are 36 inhabited houses to every square kilometre of territory in Belgium. As regards the distribution of the population generally, there are 2,417 communes having less than 5,000 inhabitants in each, and 166 with a population exceeding this number; the actual number inhabiting the former being 3,143,232, and the latter 2,376,777 persons. In the less important districts there is an average of 4·85 persons to every inhabited house, and in the more populous neighbourhoods 5·75, while the average for the country generally is 5·20. The number of separate families in 1880 was 1,210,706, or 4·56 to each family. The population was made up of 2,758,469 males and 2,761,540 females, the latter being, it will be observed, slightly in excess of the former.

As regards nationality and extraction the population of Belgium is thus divided :—

Born in Belgium or naturalised.....	5,376,748
Foreigners	143,261
Total	5,520,009

From this it will be seen that only 2·6 per cent. of the entire population are of foreign extraction, the Netherlands, Germany, and France furnishing the largest contingent.

The following tables will show the composition of the population according to civil status and age :—

	Males.	Females.	Total.	Proportion per Cent.
Unmarried and children....	1,761,160	1,680,791	3,441,951	62·4
Married.....	878,802	875,561	1,754,363	31·7
Widowed	117,479	203,841	321,320	5·8
Divorced	1,028	1,347	2,375	0·1
	2,758,469	2,761,540	5,520,009	100·0

Age Periods.	Males.	Females.	Total.
Up to 5 years	343,677	338,934	682,611
5 „ 10	308,611	304,633	613,244
10 „ 15	278,563	274,346	552,909
15 „ 20	256,356	251,549	507,905
20 „ 25	231,610	231,364	462,974
25 „ 30	196,064	193,911	389,975
30 „ 35	175,430	176,299	351,729
35 „ 40	174,903	173,057	347,960
40 „ 50	296,841	295,822	592,663
50 „ 60	238,535	239,855	478,390
60 „ 70	158,993	169,223	328,216
70 „ 80	80,611	89,976	170,587
80 „ 90	17,580	21,229	38,809
90 „ 95	613	1,170	1,783
95 „ 100	77	155	232
Above 100	5	17	22
Total	2,758,469	2,761,540	5,520,009

As regards the degree of education of the inhabitants, excluding children under 7 years of age, 1,632,398 males and 1,497,676 females are able to read and write, while 653,419 males and 798,044 females are without education, or in other words the illiterate population is represented by a proportion of 31·7 per cent.

IV.—*The Agricultural Crisis in Europe.*

Translated from an article by Dr. O. I Broch in the *Journal de la Société de Statistique de Paris*, January, 1885 :—

There can scarcely be a more interesting economic question at the present time than the state of agriculture and the cause of the depression from which it is now suffering, and it is important that we should be able to trace the causes of that depression, and to analyse how far they are of a climatic or temporary character, and to what extent they may be due to the competition of foreign produce. That this depression has existed for some considerable time there can be no question, and its effects have not been confined to one country alone, but have made themselves felt throughout the whole of Western Europe. The cycle of depression is by no means of recent growth, in fact it may be said to date from about the year 1873, and has not only weighed with great severity upon small occupiers and tenant farmers, but has also affected large landed proprietors, who have equally suffered from the pressure of foreign competition, particularly that of the United States. It has been urged in their behalf that under the

present conditions of agricultural industries, it will be well nigh impossible to carry on the cultivation of cereals at a profit.

As regards the smaller occupiers their lot is not such a hard one, as they themselves are the largest consumers of their own produce, and moreover the other occupations in which they may be engaged enable them to bear the proportion of taxation that is imposed upon them, and to provide themselves with the actual necessaries of life. It has been frequently asked, are there any real grounds for complaint, and have not the evils complained of, in the majority of cases, been grossly exaggerated? What is likely to be the future of grain cultivation in Western Europe? In what direction should agricultural industries be directed with a view to the amelioration of their condition? In answering these questions a study of statistics will very materially assist us, as they throw a considerable light upon the points at issue.

We may premise by observing, that although even at the present time the effects of agricultural depression are still acutely felt, it would be unfair to confine our observations solely to the past year, as it was in every sense a most exceptional one; harvests were uniformly abundant throughout the whole of Western Europe, and beyond the Atlantic, a phenomenon very rarely observable, as it is generally to be found that an abundant harvest in one hemisphere is coincident with a deficient harvest in the other. The year 1884 therefore, as we have stated, must be regarded as a most exceptional one, and meteorological conditions being alike favourable in both hemispheres, the harvests were abundant, and as a natural consequence there was a rapid fall in the prices of cereals.

The following tables will show the annual average prices of grain on the markets of Copenhagen, Hamburg, and Berlin, and in England, France, and Belgium in 1860, and in each year from 1870 down to the latest date for which the returns are available:—

Copenhagen. Average Price per Quarter of Rye, Barley, and Oats.

Years.	Average Price per Quarter.					
	Rye.		Barley.		Oats.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*
1860	26	11	24	8	15	11
'70	29	2	25	6	17	10
'71	32	6	27	6	18	2
'72	31	2	29	11	18	4
'73	38	4	33	1	21	11
'74	33	7	32	7	23	11
'75	31	10	30	8	22	5
'76	33	8	31	4	23	6
'77	28	8	29	9	19	3
'78	25	9	26	3	16	6
'79	28	9	28	4	17	5
'80	37	3	29	11	20	3

Hamburg. Average Price per Quarter of Wheat, Rye, Barley, and Oats.

Years.	Average Price per Quarter.							
	Wheat.		Rye.		Barley.		Oats.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
1860	43	4	32	4	28	1	18	9
'70	41	–	29	9	30	4	17	4
'71	49	7	35	9	30	9	20	5
'72	55	2	38	2	38	1	19	9
'73	57	1	45	3	41	–	22	7
'74	42	9	37	8	37	10	24	10
'75	42	9	37	1	37	5	24	10
'76	45	3	36	8	34	11	22	11
'77	51	2	41	6	34	9	23	4
'78	48	11	36	1	37	5	22	3
'79	39	1	28	7	35	8	17	5
'80	51	8	39	–	36	11	19	3

Berlin. Average Price per Quarter of Rye.

	s.	*d.*
1860	31	11
'70	28	11
'71	34	9
'72	36	7
'73	36	5
'74	40	11
'75	32	3
'76	33	8
'77	35	10
'78	30	9
'79	26	2
'80	37	8
'81	43	–

England. Average Price per Quarter of Home Grown Wheat, Barley, and Oats.

Years.	Average Price per Quarter.					
	Wheat.		Barley.		Oats.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*
1860	53	3	36	7	24	5
'70	46	10	34	7	22	11
'71	56	8	36	2	25	2
'72	57	–	37	5	23	2
'73	58	8	40	5	25	5
'74	55	8	44	11	28	10
'75	45	2	38	5	28	8
'76	46	2	35	2	26	3
'77	56	9	39	8	25	11
'78	46	5	40	2	24	4
'79	43	10	34	–	21	9
'80	44	4	33	1	23	1
'81	45	4	31	11	21	9
'82	45	1	31	2	21	10
'83	41	7	31	10	21	5
'84	35	8	30	8	20	3

France. Average Price per Quarter of Wheat, Rye, Barley, and Oats.

Years.	Average Price per Quarter.							
	Wheat.		Rye.		Barley.		Oats.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
1860	47	1	Not stated		Not stated		Not stated	
'70	47	8	37	4	29	3	23	3
'71	59	8	37	6	33	–	25	8
'72	53	11	31	6	25	6	19	4
'73	59	7	36	10	30	11	22	2
'74	58	5	40	1	35	–	26	4
'75	45	–	31	6	28	4	24	9
'76	48	7	32	6	29	2	25	6
'77	54	7	35	7	30	10	24	2
'78	53	9	33	11	31	5	23	2
'79	51	–	35	2	29	8	21	10
'80	53	4	37	1	30	5	23	2
'81	51	10	34	6	28	8	22	4
'82	50	–	32	5	29	1	22	8
'83	44	7	30	1	26	10	21	4

Belgium. Average Price per Quarter of Wheat, Rye, Barley, and Oats.

Years.	Average Price per Quarter.							
	Wheat.		Rye.		Barley.		Oats.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d.*
1860	55	7	22	1	37	3	33	10
'70	52	4	22	9	36	10	32	–
'71	—		—		—		—	
'72	—		—		—		—	
'73	—		—		—		—	
'74	—		—		—		—	
'75	42	1	24	11	34	10	32	6
'76	—		—		—		—	
'77	—		—		—		—	
'78	51	6	34	7	33	7	21	9
'79	48	7	34	3	31	7	20	5
'80	51	–	38	9	31	2	21	2
'81	51	–	40	–	30	5	21	3

It would be interesting to study the question as to how far the competition with the United States and Russia has affected the general diminution in prices, of which farmers, more particularly in France, so much complain.

The competition of the United States on the European markets first made itself felt in the year 1860, but it was not until the end of the Civil War that it assumed any serious proportions. For the first few years immediately succeeding the war, which drained this immense country both of blood and treasure, the exportation of cereals did not exercise that influence on the European markets which it subsequently did. Dating from the year 1868 however, the American harvests have always exercised a marked influence on prices, which in 1874 became preponderating. And it is also from

this period that the enormous development of railway enterprise in America and steam navigation generally throughout the world commenced to date. A glance at the following tabular statement will show the extent of the progress made since the year 1850 in the United States as regards her population, the cultivation and exportation of wheat, and in the construction and extension of railways:—

Years.	Population.	Wheat Cultivation.			Exports of Wheat.	Length of Railway Line Open.
		Acreage.	Production.	Average Produce per Acre.		
	No.	Acres.	Winchester bshls.*	Winchester bshls.*	Winchester bshls *	Miles.
1850..	23,191,000	7,000,000	100,400,000	14·3	800,000	9,021
'60....	31,445,000	12,000,000	173,100,000	14·4	4,100,000	30,600
'65...	38,558,000	12,300,000	148,500,000	12·0	10,000,000	35,100
'70....	—	18,900,000	235,800,000	12·4	36,600,000	52,900
'75....	—	26,400,000	292,100,000	11·0	53,000,000	74,100
'76....	—	27,600,000	289,300,000	10·4	55,100,000	76,800
'77....	—	26,300,000	364,200,000	13·9	40,300,000	79,100
'78....	—	32,100,000	420,100,000	13·1	72,400,000	81,800
'79...	—	32,500,000	448,700,000	13·8	122,300,000	86,500
'80 ..	50,153,000	37,900,000	498,500,000	13·4	153,200,000	93,500
'81...	—	37,700,000	380,300,000	10·1	150,600,000	103,300
'82....	52,000,000	37,100,000	504,300,000	13·6	95,300,000	114,900
'83...	—	36,500,000	421,100,000	11·5	106,400,000	120,600

* The Winchester bushel is smaller than the imperial bushel by one thirty-second part.

From 1870 to 1880 the population of the United States increased to the extent of 35 per cent., but in this increase immigration played no inconsiderable part. During the quinquennial period ended 30th June, 1884, immigration brought to the shores of the United States alone, approximately three millions of people, the majority of whom were of a productive or marriageable age, and therefore became a direct addition to the producing and wealth increasing element of the country of their adoption. From 1870 to 1882 the acreage under wheat cultivation had almost doubled, and the production had certainly more than doubled; while if we look at the expansion of the railway system we find that while the total length of line open in 1870 only amounted to 52,900 miles, in 1882 it amounted to 114,900 miles.

In 1882 the total acreage under corn crops and potatoes amounted to 128 million acres, that is, more than three times the extent of land under similar cultivation in France. These 128 million acres were distributed as follows:—

	Acres.	
Under wheat	37,000,000	or 29 per cent.
,, rye	2,200,000	,, 1·7 ,,
,, barley	2,300,000	,, 1·8 ,,
,, oats	18,470,000	,, 14·3 ,,
,, buckwheat	840,000	,, 0·6 ,,
,, maize	65,600,000	,, 51·0 ,,
,, potatoes	2,170,000	,, 1·6 ,,

The extent of land under corn crops and potatoes amounted therefore to 128 million acres, of which 37 millions were under wheat cultivation, while comparing this with France we find that taking the same period, the acreage under grain properly so called does not exceed 38 million acres.

Coming next to the question of the export trade in wheat from the United States, it appears that while in the year 1860 the quantity exported only amounted to between 4 and 5 million bushels, it rose in 1873-74 to over 36 millions, and in 1880-81 to 150 millions. The exportation has necessarily varied very considerably with the harvests, but it is estimated that in the worst harvest years an average amount of from 100 to 140 million bushels may be relied upon as being available for export, and this would be equivalent to half of the total production of France. And although the industrial population, who are consumers of wheat without being producers, are considerably on the increase in the United States, it may reasonably be assumed that for some considerable time to come, how long it is impossible to predict, there will be increased quantities of grain available for export from this country. And this may be accounted for not so much by reason of the vast extent of arable land and virgin soil in the country, but more particularly by the changes that have been effected in the system of cultivation, greater attention being paid to the science of agriculture as the population augmented and the land increased in value.

If the total yield of wheat in the United States does not at the present time average more than about 12 bushels per acre, this average is considerably exceeded in some parts of the country, notably in Ohio, Michigan, Indiana, and Illinois, States most densely populated, where it is as high as 17 or 18 bushels per acre.

Another country which has made great progress in the development of agricultural industries is Russia, and the improvement has been more particularly noticeable since the liberation of the serfs in 1863, and the extension of the railway system. In this country particular attention appears to be devoted to the cultivation of rye, but owing to the absence of any reliable statistics of agriculture in Russia in recent years, it is almost impossible to obtain any accurate information as to the extent of land under cultivation and the acreage produce of the various crops for any year later than 1872, when the returns were as follows:—

Crop.	Area under Cultivation.	Produce.	Average Produce per Acre.
	Acres.	Bushels.	Bushels.
Wheat	28,743,000	157,800,000	5·4
Rye	66,398,000	543,600,000	8·2
Barley	15,511,000	119,300,000	7·7
Oats	32,818,000	540,000,000	16·4
Maize	11,310,000	86,300,000	7·6
Potatoes	3,169,000	370,900,000	119·9
Total	157,949,000	1,817,900,000	—

It is generally admitted that of late years the production of cereals in Russia has considerably increased, and although it is impossible to obtain any exact data as to the actual amounts now annually produced, the following estimates may be taken as approximately correct :—

	Bushels.	Bushels.
Wheat	250,000,000 or	9·0 per acre.
Rye	704,000,000 „	10·6 „
Barley	137,000,000 „	8·9 „
Oats	577,000,000 „	17·6 „
Potatoes	350,000,000 „	111·4 „

The following tabular statement will show the extent to which the export trade in cereals is carried on in Russia, together with the total length of railway lines open in each year from 1870 to 1882 :—

Years.	Grain Exported.		Length of Railway Lines Open.
	Wheat.	Other Kinds.	
	Bushels.	Bushels.	Miles.
1870	57,300,000	65,900,000	6,700
'71	66,500,000	67,500,000	7,000
'72	54,300,000	32,900,000	9,100
'73	37,300,000	75,700,000	10,000
'74	44,000,000	107,400,000	11,500
'75	55,000,000	74,000,000	12,100
'76	53,300,000	92,000,000	12,600
'77	50,100,000	126,000,000	13.000
'78	99,500,000	40,500,000	13,600
'79	80,300,000	141,900,000	13,800
'80	47,300,000	102,000,000	14,600
'81	47,200,000	86,200,000	14,200
'82	73,900,000	126,500,000	14,200

The exportation of cereals must necessarily be largely influenced by facilities of the means of transport, and in this respect, Russia is greatly deficient. She owns in Europe vast tracts of most fertile land, but rendered comparatively valueless by reason of the fact that they are imperfectly cultivated and in many cases from the absence of the means of communication, almost inaccessible. If therefore Russia now exports annually between 70 and 80 million bushels of wheat, it may reasonably be assumed that in the not very distant future, when her railway system becomes more developed, a considerable increase in the export of grain will be observable from this vast empire, which for years to come will maintain her reputation as an essentially corn growing country.

Among the other European countries only Denmark, Hungary, and Roumania are enabled to export grain to any considerable extent, owing to the excess production in these countries beyond the wants of their own population. As regards Denmark a considerable falling off has for some time been apparent in the exportation of cereals, and the excess of exports over imports of every description of grain and of farinaceous products, the latter

reduced to the quantity of grain from which they are derived, appears to have averaged as follows for the undermentioned periods :—

Periods.	Excess of Exports over Imports.
	Bushels.
1865-69	9,100,000
'70-74	10,900,000
'75-79	5,100,000
'80-82	4,600,000

To this quantity wheat only contributes to the extent of about 2 million bushels. It is quite within the range of possibility that Denmark, whose industrial and commercial population is rapidly on the increase, may during the course of the next few years cease to be included among those countries from which regular supplies of grain are drawn.

In Hungary about 20 million acres are devoted to the cultivation of grain and potatoes, of which about 6 million acres are under wheat, and approximately 4 million under maize. During the three years ending 1882 the production of wheat has averaged as follows :—

	Bushels.
1880	77,000,000
'81	86,000,000
'82	126,000,000

And as regards the export of wheat from Austro-Hungary the average amount during the period comprised between the years 1879-83 has generally exceeded 10 million bushels. The quantity produced in Hungary over and above the wants of her own population is very considerable but a large amount of this is required for home consumption in Austria.

In Roumania about 7 million acres are under grain cultivation, and the annual average production is as follows :—

	Bushels.		Bushels.
Wheat	33,000,000	Oats	8,200,000
Rye	5,500,000	Maize	104,000,000
Barley	19,000,000	Other kinds	8,000,000

It may be taken that in good harvest years Austro-Hungary and Roumania together supply Western Europe with an average annual amount of 37 million bushels of grain of all kinds, and to this amount wheat contributes to the extent of about 17 million bushels.

Among other grain producing countries Egypt, British North America, Chili, British India, and Australasia are all engaged in a large export trade in wheat, and a reference to the following table may be interesting, as showing the quantity annually exported from these countries to the United Kingdom, this country taking almost the whole of their exports :—

Years.	Egypt.	British North America.	Chili.	Australasia.	British India.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
1869	1,800,000	5,000,000	1,000,000	330,000	2,000
'70	193,000	5,200,000	1,100,000	157,000	15,000
'71	1,600,000	6,000,000	936,000	585,000	406,000
'72	4,300,000	3,200,000	2,600,000	924,000	289,000
'73	2,300,000	6,900,000	2,907,000	3,325,000	1,400,000
'74	542,000	7,000,000	3,556,000	1,000,000	1,900,000
'75	3,900,000	6,000,000	1,600,000	2,030,000	2,400,000
'76	4,100,000	4,400,400	1,800,000	4,800,000	6,000,000
'77	4,500,000	5,400,000	1,400,000	785,000	11,230,000
'78	400,000	4,800,000	93,000	2,600,000	3,300,000
'79	3,795,000	8,800,000	2,600,000	4,000,000	1,600,000
'80	2,900,000	7,000,000	2,500,000	7,800,000	5,900,000
'81	1,900,000	5,300,000	2,000,000	5,400,000	13,500,000
'82	322,000	4,900,000	3,000,000	4,500,000	15,600,000
'83	2,200,000	3,300,000	4,100,000	4,900,000	20,700,000

Thus it will be seen that the average supplies from these countries for the quinquennial period ending 1883, amounted to the large total of 28 million bushels; and having regard to the export to destinations other than the United Kingdom, it may safely be assumed that there is an average annual supply available from these countries of more than 30 million bushels; and it may be added that in the case of Australasia and British India the quantity exported increases year by year.

As regards the rest of Western Europe, it is more or less dependent upon a regular supply of imported grain, the quantity necessarily varying with the condition of the home harvests; and it has been estimated that taking the most recent years the average annual excess of imports over exports of wheat in the United Kingdom, France, and Germany, amounts respectively to 123, 41, and 13 million bushels.

The causes which have contributed to this excess of imports are to be found in the development of industry and commerce, and in the ever increasing numbers of the industrial population in these countries, with which the increase in grain production has been unable to keep pace. The United Kingdom was the first to undergo a revolution in this respect, and to effect a change from an agricultural country well able to meet with her own produce the demands for home consumption of grain, to a country essentially industrial and commercial, dependent for her requirements upon a regular supply of imported food stuffs. It is not more than a century and a half ago that England exported in good harvest years some 300,000 bushels of corn, and it was only towards the end of the last century that the importation of grain into the United Kingdom commenced to be an absolute necessity. And here it may be observed that agriculture itself is far from being on the decline in the United Kingdom; on the contrary, it is in this country that we find the greatest attention devoted to every branch of the science, and although there undoubtedly may be found in a few districts, a

falling off in the acreage under grain cultivation, this is amply compensated by an extension in the area in others. The reason for the necessity of importing cereals into the United Kingdom is clearly that the progress of the development of agriculture has not been in proportion to the increase of her population. Great Britain and Ireland together, whose combined population did not exceed at the commencement of the present century 17 millions, which had increased in 1848 to 26 millions, now numbers 36 millions of inhabitants; and as the total annual production of grain and bread stuffs only averages 385 million bushels, of which barely 110 millions consist of wheat, the deficiency has necessarily to be made up by drawing upon foreign supplies.

In Germany, rye preponderates as much in its production as its consumption by the people, and it was in this crop that a falling off commenced about the year 1852, when it first became necessary to have recourse to foreign importations. Since that year the quantities imported have almost invariably exceeded the exports, the average annual excess during the last ten years amounting to as much as 28 million bushels. As regards German wheat production, since 1876 the harvests have been almost a total failure, and of recent years the average annual excess of imports over exports of this description of grain has been about 14 million bushels, while the barley harvests have almost regularly failed since 1870, and oats since 1872. The following tabular statement will show the excess of imports over exports of wheat, barley, rye, and oats in each year from 1878 to 1882 inclusive:—

Years.	Excess of Imports over Exports.			
	Wheat.	Barley.	Rye.	Oats.
	Bushels.	Bushels.	Bushels.	Bushels.
1878	10,000,000	7,400,000	27,000,000	9,000,000
'79	11,000,000	2,600,000	47,600,000	12,100,000
'80	1,800,000	5,500,000	23,800,000	4,100,000
'81	11,000,000	10,200,000	19,800,000	7,400,000
'82	22,000,000	11,000,000	23,100,000	17,300,000

Coming next to the question of the area under cultivation and the average results of the harvests in Germany for the period comprised between 1878 and 1882, a reference to the following table will be useful:—

Crop.	Area under Cultivation.	Production.	Average Produce per Acre.
	Acres.	Bushels.	Bushels.
Wheat	5,400,000	101,700,000	18·8
Rye	14,632,000	227,400,000	15·6
Barley	4,000,000	94,600,000	23·6
Oats.....	9,200,000	247,200,000	26·8
Potatoes	6,800,000	789,500,000	116·1

Taking therefore for the same period the population of Germany, which averaged about 45 millions, if we deduct 12 million bushels of wheat and 33 million bushels of rye required for sowing, we find that the consumption in that country amounted to about 2 bushels of wheat and 4·3 bushels of rye per head of population.

France since the year 1826 has, as a general rule, been dependent upon a regular supply of foreign imported wheat, but it was not until the year 1851 (with one or two exceptions, notably the good harvest years 1858-60, 1864-66, and 1875) that the imports exceeded the exports to any appreciable extent, and we find from the annual tables of trade prepared by the French Customs Department that the extent of the excess imports of wheat over exports during the period 1860-65 averaged about 8 millions of bushels; in 1865-69 about 9 millions, and in the period 1870-75 it amounted to over 13 millions; while during the period comprised between 1876 and 1880 this excess of imports rose to 41 million of bushels.

A reference to the following table will show the average extent of land under wheat cultivation, the estimated produce, and the yield per acre in France during the seven years ended 1882:—

Crop.	Acreage.	Production.	Yield per Acre.
	Acres.	Bushels.	Bushels.
Wheat	17,100,000	273,600,000	16·0
Mixed grain	1,100,000	16,900,000	15·3
Rye	4,500,000	69,600,000	15·5
Barley	2,500,000	48,700,000	19·5
Oats	8,300,000	208,800,000	25·2
Buckwheat	1,600,000	27,100,000	16·9
Maize and millet	1,700,000	27,600,000	16·2
Potatoes	3,200,000	325,500,000	101·7

Out of a total of 40 million acres under corn crops and potatoes, 18 millions, or 45 per cent., are under wheat and mixed corn. The average production of wheat and mixed corn is 290 million bushels, from which must be deducted 40 millions for sowing, and the excess of imports over exports of wheat during the same period has averaged 42 million bushels. From this it follows that the consumption of wheat and mixed corn in France during the septennial period 1876-82 has averaged 291 million bushels annually, thus giving a proportion of 7·8 bushels per head of population. As regards other descriptions of grain, the consumption is very much more restricted than in the majority of European countries.

The following tabular statement will show in a comparative form the average yield per acre of grain and potatoes in the principal countries of Western Europe, and in Russia, Hungary, the United States and Australasia:—

Countries.		Average Yield per Acre of							
		Wheat.	Spelt.	Rye.	Barley.	Oats.	Buck-wheat.	Maize.	Potatoes.
		Bshls.	Bshls.	Bshls.	Bshls.	Bshls.	Bshls.	Bshls.	Bshls.
Norway	average	24·7	—	26·8	31·0	39·3	—	—	227·1
Sweden	1878-81	19·9	—	19·9	33·5	33·5	—	—	121·1
Denmark	'76-81	24·6	—	24·6	27·2	29·8	—	—	94·9
Germany	'78-82	18·7	17·2	15·6	23·6	26·8	—	—	121·1
Holland	'78-82	22·7	—	18·4	36·6	41·5	17·6	—	177·1
Belgium	'78-82	23·8	—	22·3	34·6	40·4	—	—	164·1
United Kingdom	average	35·2	—	33·4	37·8	33·4	—	—	—
France	1876-82	16·0	16·4	15·5	19·5	25·2	16·9	16·2	101·7
Italy	'75-80	12·0	—	—	15·3	19·6	—	20·6	164·0
Austria	'79-81	15·5	—	14·3	16·8	20·0	—	—	130·0
Hungary	average	11·7	—	—	16·0	17·9	—	17·4	106·8
Russia	„	9·0	—	10·6	8·9	17·6	7·6	—	111·4
United States	1878-82	12·0	—	12·7	21·7	26·3	14·2	24·4	75·8
Australasia	'78-82	10·2	—	—	21·1	27·9	—	33·4	141·4

From the above it will be seen that the United Kingdom is the country distinguished by the highest average wheat production, and if England alone were to be considered we should find that the proportionate yield would be higher even than that shown for the whole of the United Kingdom. For example, the average yield per acre of wheat in England is estimated at 40 bushels, and compared with this the figures for France, Austria, and Italy sink into comparative insignificance.

The proportionate yield in Russia it will be observed is remarkably low, and the same may be said of the United States; though in the latter country particularly in the eastern and central States, where the population is densest, and where land is most valuable, there is a decided tendency to an increased yield. And it is to the change from the extensive to an intenser cultivation, as well as to the opening up of new ground by the development of the railway system in recent years, that the immense progress made in the agricultural industries of the United States is to be attributed. There is therefore only too good reason to assume that the American competition will become still more keen, and that the agricultural produce of that country will increase in far greater proportion than the growth of its population.

In Italy the average yield is not higher than in the United States, but in this country also there are certain districts, particularly in the north, where agriculture is making considerable progress. As regards France she is certainly far in advance of Austria and Italy in the matter of her annual yield of crops, but as an agricultural country she makes but little progress owing to the absence of any improvement in the old processes employed in her agricultural industries. Although France generally is much behind her neighbours in the matter of her average wheat production, in certain districts of the north very good returns in the wheat yield are shown, the average produce per acre amounting to as much as 26·7 bushels, while to the south of the Loire the average is as low as 11·1.

The reason of this inferiority is not far to seek, it undoubtedly lies in the fact that liberal supplies of good farm yard manures are not applied in sufficient quantities to the soil, though the question of manuring generally is far from being neglected. In this respect France compared with her neighbours, labours under very serious disadvantages, as owing to her limited number of live stock it is impossible for her to obtain the necessary supplies of farm yard manures, and she is therefore forced to have recourse to artificial manures, which have not the same effect in fertilising the soil. In this connection a reference to the following table will be useful, as it shows for the principal countries the number of each description of live stock to every square kilomètre of land under cereals of all kinds, potatoes, beetroot, tobacco, flax, hemp, colza, and vines, all of which more or less require a liberal supply of farm-yard manure :—

Countries.	Number of Live Stock to every Square Kilomètre under Cultivation.				
	Horses, Mules, Asses.	Oxen.	Cows.	Goats.	Pigs.
	No.	No.	No.	No	No.
Norway	71	479	791	181	80
Sweden	23	111	70	5	21
Denmark	29	124	131	—	48
Germany	29	91	141	15	53
Holland	35	185	102	20	36
Belgium	22	113	119	20	52
United Kingdom	32	158	441	—	63
France	20	59	116	78	29
Italy	14	47	84	20	11
Austria	19	164	47	12	3

Of all the countries of Western Europe, France and Italy are the two which in proportion to the extent of their cultivated area requiring the application of animal manure, produce the least, and those countries which are the most remote from France are the richest in this respect. And again, as regards the two countries in question, the deficiency in farm yard manures is not made up by artificial manures, as the latter, in both, is applied only to a limited extent. On this point we may observe that while the United Kingdom annually imports, on an average, artificial manures in the shape of bones, fish, guano, and phosphates to the value of about 2 million pounds, France, which has an extent of cultivated land almost three times as great as that of the former country, imports but a third of this amount. In the purchase of guano it is estimated that the United Kingdom expends annually a sum of 800,000*l.*, while the French expenditure is very small as compared with this.

Statistics therefore clearly show how necessary it is, in order to effect an improvement in French agricultural conditions, that a change should be made in the system of cultivation now in vogue; an intenser cultivation should at once be adopted, a more liberal supply of artificial manure employed, greater attention paid to stock

breeding, the extent of land under grain cultivation diminished, and of grass land increased, thereby effecting an augmentation of the production of animal manure, and bringing it more in proportion to the area under cultivation. And again, as regards the introduction of foreign cattle into France, the fattening of which proves so remunerative to those engaged in the business, no other restrictions should be placed on a free importation than those rendered absolutely necessary with a view to check the spread of cattle disease.

But that which above all is most urgently needed is the means of extending a knowledge of the principles of agricultural science, and with a view to materially furthering the interests of agriculturists generally by the establishment of agricultural laboratories throughout the country. Similar institutions placed at the disposal of farmers to assist them in the selection of the particular manures best adapted for each description of crop, to teach them the value of artificial manures, which are too often delivered in a condition almost worthless through adulteration, and to render them valuable assistance generally, have long been established in many countries.

Unfortunately at the present time it is not an uncommon circumstance for artificial manure, guano, and even seed for sowing, to be sold to farmers so adulterated as to be almost useless; and as in many cases the farmers themselves are unable to detect the imposition, it is incumbent upon the State to come to their assistance, and prosecute the perpetrators of a fraud by no means rare in the present state of commercial morality.

It is also in the further development of agricultural credit that valuable assistance would be rendered to farmers in effecting the necessary change to an intenser cultivation. It is an established fact that in France the peasants are more industrious and economical than in almost any other country, but unfortunately they prefer to dispose of their spare capital in increasing their holdings rather than to devote it to an intenser cultivation of the soil they already possess. It is estimated that the capital laid out by the French peasant or small farmer in working his land, in the purchase of manures and agricultural machinery, and in stock-breeding, is much smaller in proportion than that invested by the English farmer. Agriculture generally would be greatly stimulated by an extension of the present credit system, and the particular credit required differs in many respects from the *Credit Foncier*. While the latter is intended to supplement fixed capital, and is granted under the form of mortgage, the former should be based on the pecuniary resources of the borrower, or on his reputation for honesty and industry. In the Scandinavian countries it is chiefly through the numerous savings banks which are established throughout the country that advances are made to farmers, small tradesmen, and artisans to assist them in developing their business. The advances made by these institutions are usually secured by the guarantees of two or three persons who become sureties for the repayment of the sums advanced.

In connection with the important question of the means whereby an improvement would be effected in the present condition of the

agricultural industries, we cannot insist too strongly upon the necessity of facilitating the transport of town sewage into the agricultural districts, and the circulation of artificial manures prepared in the country or introduced from abroad; while it is above all indispensable that every facility should be offered for the rapid transport of the agricultural produce itself. Again, as regards the system of land tenure now in vogue in certain districts, many reforms are urgently needed, and fresh legislation is required with a view to offer inducements to occupiers to make such improvements and repairs as may be necessary for the better cultivation of their land and the enhancement of the value of their holdings, by assuring to themselves the benefits that would ultimately be derived from such improvements. And lastly, there is much to be said in favour of putting an end to the excessive subdivision of land, so fatal to a good system of cultivation. In fact on this point we are of opinion that it would be advisable in some cases to follow the example so recently set in Norway, and insist upon a fresh distribution of land where excessive subdivision has rendered all profitable cultivation almost impossible.

But reverting to the statistics of the production of cereals and potatoes in the various countries of Europe, and in the United States, Canada, and Australasia, the following summary will show the extent of this production, estimated for average years, together with the number of the inhabitants of each country according to the population returns for the year 1880:—

[000's omitted.]

Countries.	Population.	Production of						
		Wheat and Spelt.	Rye.	Barley.	Oats.	Buck-wheat.	Maize and Millet.	Potatoes.
		Bshls.	Bshls.	Bshls.	Bshls.	Bshls.	Bshls.	Bshls.
Norway	1,910,	2,195,	1,000,	4,400,	10,700,	—	—	19,500,
Sweden	4,570,	9,093,	18,300,	14,800,	68,200,	—	—	46,200,
Denmark	1,970,	6,615,	15,400,	20,600,	28,300,	—	—	9,900,
Finland	2,060,	—	11,000,	6,000,	4,900,	—	—	9,600,
Russia	81,600,	250,000,	704,000,	137,000,	577,000,	—	—	349,200,
Germany	45,200,	101,700,	227,000,	94,600,	247,200,	—	—	789,000,
Austria	22,130,	37,000,	67,000,	43,400,	88,500,	—	—	318,800,
Hungary	15,610,	70,900,	38,000,	37,700,	44,800,	—	79,200,	100,900,
Roumania	5,380,	33,000,	5,500,	19,200,	8,000,	—	104,000,	8,200,
Switzerland	2,850,	2,200,	8,500,	1,400,	5,200,	—	—	24,750
Holland	4,110,	5,200,	9,100,	4,100,	11,800,	2,500,	—	61,600,
Belgium	5,520,	19,500,	17,600,	3,600,	22,300,	—	—	69,000,
United Kingdom	35,200,	104,000,	1,700,	96,000,	140,200,	—	—	206,000,
France	37,700,	290,000,	69,600,	48,700,	208,700,	27,000,	26,900,	325,000,
Italy	28,500,	140,000,	—	17,600,	18,400,	—	—	27,500,
Spain	16,300,	110,000,	31,900,	76,400,	12,400,	—	—	5,500,
Portugal	4,160,	8,200,	6,300,	1,600,	1,100,	—	—	8,200,
Greece	1,980,	4,400,	—	1,600,	—	—	—	—
Turkey	7,200,	41,000,	—	—	—	—	—	—
United States	52,000,	486,700,	28,900,	47,300,	472,300,	10,700,	1,625,000,	165,000,
Canada	4,000,	33,000,	—	22,000,	74,200,	—	—	—
Australasia	3,000,	32,600,	—	2,100,	16,500,	—	5,500,	13,200,

It will be seen from the above that Europe, excluding Servia, for which country there is an absence of statistical data, had a total population in 1880 of 324 millions, and her average grain production in recent years amounted approximately to 5,000 million bushels.

And here it may be observed that this total agrees very nearly with an estimate made by M. Toussaint Loua for the year 1868, when he gave as the total production of grain 4,765 million bushels, the European population then being taken at 296 millions. It follows therefore that the production of cereals has remained almost stationary during the twelve years intervening between the date of the present estimate and that of M. Toussaint Loua, while the population has increased to the extent of 30 millions, and this shows very conclusively that the importation of foreign grain has become an absolute necessity in order that the average consumption per head of population should be maintained at the same rate as it then was.

Deducting from the above amounts a seventh of the production for seed, and adding 150 million bushels of wheat and 80 million bushels of maize imported from extra European countries, we find the average European consumption to be approximately as follows :—

	Bushels.
Wheat	1,200,000,000
Rye	1,020,000,000
Barley	541,000,000
Oats	1,295,000,000
Buckwheat	24,000,000
Maize	260,000,000
Potatoes	2,098,000,000

Wheat and rye enter the most largely into human consumption; a certain quantity of rye is used for fattening cattle and in the production of alcohol, but barley and oats are largely used as food. It may therefore be estimated that the total quantity of grain used for human consumption in Europe amounts to the enormous total of 2,227 million bushels, or an average consumption of 6·8 bushels per head of population, the highest proportion being found in France, where the largest quantity of bread is used. In the Scandinavian countries, as well as in Russia, Austria, and the Netherlands, rye is the principal grain consumed; while in the United Kingdom, Hungary, France, and in the Mediterranean countries generally, it is wheat.

Potatoes also enter very largely into the food of the people, but owing to the immense quantities used in various industries, principally in the manufacture of spirits, and for feeding cattle, it is impossible to even approximately estimate the average consumption per head of population in Europe.

V.—*Additions to the Library.*

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Memorial of Landholders and Traders of Karwar and Hubli (Malabar Districts, Western India), asking for speedy construction of a Railway from the Malabar Coast to the Uplands of the Southern Deccan . . . 25 pp., 8vo. Bombay, 1880	W. Martin Wood, Esq.
Minchin Bros. & Co. Paris Exhibition, 1878. The Robert Diffusion Process (for Cane), illustrated by Analyses of Cane, Megass, &c., by—. 4 pp., 8vo.	H. Ling Roth, Esq.
Pierrard (Paul). Étude sur l'Industrie Lainière en France, et les moyens de ramener sa prospérité. 57 pp., 8vo. 1869	The Author

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Sugar Industry of Germany. Information and Particulars relating to the—. 8 pp., fol., MSS. 1884	Messrs. Thomson, Hankey & Co.
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Van de Linde (G.). Lecture on the Preparation and Audit of Income and Expenditure Accounts. 24 pp., 8vo. 1885	,,
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Arts, Society of—. Journal of the—. Current Nos. 1885	The Society
British Association for the Advancement of Science. Report of the Fifty-fourth Meeting of the—, held at Montreal, in August and September, 1884. lxxxviii + 979 + 111 pp., cloth, plates, &c. 8vo. 1885	The Association
(Contents of Section F. Economic Science and Statistics)—	
Address of the President on the General Statistics of the British Empire, by *Sir Richard Temple, Bart.*;	

Donations--Contd.

Donations.	By whom Presented.
(e) **Societies, &c.**—*Contd.*	
British Association. Contents of Section F.—*Contd.* What makes the Rate of Wages, by *E. Atkinson;* The Post Office Savings Bank System of Canada, by *J. C. Stewart;* The British Empire in North America and in Australasia, by *W. Westgarth;* Media of Exchange: some Notes on the Precious Metals and their Equivalents, by *J. B. Martin;* National Debts, by *M. G. Mulhall;* On the Production and Consumption of Meat in the United Kingdom, by *Major P. G. Craigie;* British and Canadian Agriculture, by *Prof. J. P. Sheldon;* The Position and Prospects of British Agriculture, by *Prof. W. Fream;* The Agricultural Resources of Ontario, by *J. Carnegie;* On the Agricultural Resources of Nova Scotia, by *Major-General Laurie.* Report of the Anthropometric Committee. Report of the Committee on the Teaching of Science in Elementary Schools. The Interdependence of the several portions of the British Empire, by *S. Bourne;* The Factory Acts, by *R. W. Cooke-Taylor;* The Phospate Industry of Canada, by *R. C. Adams;* The Fisheries of Canada, by *L. Z. Joncas;* The Distribution of Canadian Forest Trees, by *A. T. Drummond;* The Forests of Canada, by *R. Bell;* Forests, their Value Meteorologically, and as National Reserves, by *G. P. Hughes;* Internal Communication by Land and Water, by *C. Walford;* On Land Laws, by *E. de Laveleye;* On the Probability that a Marriage entered into at any Age will be Fruitful, and that a Marriage which has been Childless for several years will subsequently become Fruitful, by *T. B. Sprague;* On the relative Dangers of Coal and Metal Mining in the United Kingdom, by *C. Le Neve Foster;* Prospective Prices in Europe, America, and Asia, by *Hyde Clarke;* Harmonies and Antagonisms in the Social Forces, by *W. H. Douglass;* Notes on Friendly Societies, with special Reference to Lapses and Malingering, by *Rev. G. C. White;* The Commercial Relations of Canada with Spain and her Colonies, by *Don A. de Marcoartu;* The Forests of Canada, by *J. B. Hurlbert*	The Association
Cobden Club. Leaflets. Nos. 1—22. 8vo. [1885]	The Club
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Institute of Bankers. Journal of the—. April—June, 1885	The Institute
Institution of Civil Engineers. Minutes of Proceedings of the—. Vols. lxxix and lxxx, cloth, plates, 8vo. 1885	The Institution
Institution of Mechanical Engineers. Proceedings, March, 1885, No. 2, plates, 8vo.	,,
Institution of Surveyors. Transactions of the—. Part 4, Nos. 9—12, 1884-85	,,
International Health Exhibition, London, 1884. (The Health Exhibition Literature)— Vol. I. *Health in the Dwelling.* Part 1. Handbooks. Health in the Village, Healthy Nurseries and Bedrooms, including the Lying-in Room. Healthy and Unhealthy Houses in Town and	A.J.R.Trendell,Esq., Science and Art Department, Committee of Council on Education

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International Health Exhibition, London, 1884. (The Health Exhibition Literature)—*Contd.*	
Vol. I—*Contd.* Country. Healthy Furniture and Decoration. Healthy Schools. Health in the Workshop. On Ventilation, Warming, and Lighting for Domestic Use. Vol. II. Part 2. Conferences. Dwellings for the Poor, the Sanitary Construction of Houses. Promotion of Social Science. Vol. III. Part 3. Lectures. Anglo-Saxon Dwellings. Healthy Houses. Healthy Town and Country Houses. Foul Air in Houses. Ventilation in connection with Warmth and Lighting. Healthy Furniture. The Domestic Use of Gas. Health in the Workshop. Smoke Abatement	
Vol. IV. *Health in Diet.* Handbooks. Physiology of Digestion and the Digestive Organs. The Principles of Cooking. Diet in relation to Health and Work. Food and Cookery for Infants and Invalids. Alcoholic Drinks. Water and Water Supplies. Unfermented Beverages, Salt and other Condiments. Vol. V. Part 2. Conferences. The Meat Supplies of this Country. The Adulteration of Food. Bee-keeping. Vol. VI. Part 3. Digestive Ferments and Chemical Processes of Digestion. The Rearing of Hand-fed Infants. Practical Dietetics. The Chemistry of Bread Making. The Science of Cookery. Pure Milk. The English Dairy. The Danish Dairy. Dairy Management. Æsthetical Use of Wine, and its Influence upon Health	A J.R.Trendell, Esq., Science and Art Department, Committee of Council on Education
Vol. VII. *Health in relation to Civic Life.* Part 1. Handbooks. Our Duty in relation to Health. Infectious Disease and its Prevention. Accidental Injuries, their Relief and Immediate Treatment. Ambulance Organisation. Equipment and Transport. Cleansing Streets and Ways in the Metropolis, Fires and Fire Brigades. Legal Obligations in relation to the Dwellings of the Poor. Schools of Art, their Origin, History, Work, and Influence. Vol. VIII. Part 2. Conferences. Domestic Sanitation. St. John Ambulance Association. Water Supply and Distribution. Vol. IX. Part 3. Lectures. Anglo-Saxon Dress and Food. Village Health and Village Life. Recreation. Ambulance Organisation in War and Peace. Prevention of Cholera. History and Results of a Dispensary for Sick Children Threatened with Chronic Disease. Ethics of the Skin. Our Domestic Poisons. Thrift in its relation to Health, or the Right Use of Refuse	
Vol. X. *General Hygiene.* Part 1. Handbooks. Athletics; or Physical Exercise and Recreation. Athletics, Part 2. Dress and its Relation to Health and Climate. Fermentation. Public Health Laboratory Work. London Water Supply.	

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International Health Exhibition, London, 1884. (The Health Exhibition Literature)—*Contd.*	
Vol. XI. Part 2. Conferences. Meteorology in relation to Health. Oral Instruction of the Deaf and Dumb. Electric Lighting in relation to Health. Epidemic Diseases. School Hygiene and School Construction. Vol. XII. Part 3. Lectures. The Parasites of Meat and Prepared Flesh Food. Candles. Soap. The History of English Dress. Children's Dress. Textile Fabrics. Physical Education of Girls. Old and Modern Poison Lore	
Vol. XIII. *Conference on Education.* Opening Meeting and Introductory Address. Section A. Organisation of Elementary Education, &c. Vol. XIV. Section B. Technical Teaching. Subsidiary Aids to Instruction. Thrift in Schools. Vol. XV. Section C. Organisation of University Education. Vol. XVI. Section D. Training of Teachers. Organisation of Intermediate and Higher Education	A. J. R. Trendell, Esq., Science and Art Department, Committee of Council on Education
Vol. XVII. Miscellaneous. Special Catalogue of the Education Division. Catalogue of Manufactures, Decorations, and Designs. Library Catalogue. Catalogue issued by the Sanitary Bureau of Japan. Catalogue with Explanatory Notes from the Education Department of Japan. General Outline of Education in Japan	
Vol. XVIII. Miscellaneous. Reception of H.R.H. the Prince of Wales, K.G., of the International Juries. Jury Awards. Official Catalogue	
Vol. XIX. Return of Number of Visitors and Statistical Tables. Official Guide. Guide to the Sanitary and Insanitary Houses. Handbook to the Aquarium and Fish Culture Department. Anthropometric Laboratory. Public Health in China. National Education in China. Diet, Dress, and Dwellings of the Chinese in relation to Health. 19 vols. Cloth, illustrations, &c., 8vo. 1884	
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Drink, by Lord Bramwell. 1885	The League
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Catalogue of the Books in the—. Reference Department. Vol. ii, comprising the Additions from 1864 to 1879. 1107 pp., cloth, 8vo. Manchester, 1879	The Committee of the Manchester Public Free Library
Catalogue of the Books in the—. Reference Department. Index of Names and Subjects. 614 pp., cloth, 8vo. Manchester, 1881	
Manchester Statistical Society. The Need for Better Organisation of Benevolent Effort in Manchester and Salford; by F. Scott. 1885	The Society
Metropolitan Public Garden, Boulevard, and Playground Association. Second Annual Report of the—. 98 pp., 12mo. 1884	The Association
Middlesex Hospital. Reports of the Medical, Surgical, and Pathological Registrars for the year 1883. 8vo.	The Hospital
Mitchell Library, Glasgow. Report on the—, 1884	The Librarian
National Anti-Bounty League. Diagram illustrating Effects on British Home and Colonial Sugar Industries of the Foreign Export Bounty System. 4 copies, sheet. 1885	The League
Royal Agricultural Society of England. Journal of the—. Second Series, vol. xxi, part 1, No. 41, 1885. Map and illustrations	The Society
Royal Asiatic Society of Great Britain and Ireland—	
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Royal College of Physicians of London. The Nomenclature of Diseases, drawn up by a Joint Committee appointed by the—. (Subject to Decennial Revision.) Second edition, being the First Revision. xxxix + 431 pp., cloth, 8vo. 1885	Messrs. Harrison and Sons
Royal Geographical Society. Proceedings of the—. Vol. vii, Nos. 3—5, 1885	The Society
Royal Institution of Great Britain. Proceedings of the—. Vol. xi, part 1, No. 78. Plates, 8vo. 1885.	The Institution
Royal Medical and Chirurgical Society—	
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President's Address. 8vo. 1885	
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Royal United Service Institution—	
Journal of the—. Vol. xxix, Nos. 128, 129. Map, &c. 1885	The Institution
Index of Subjects and Proceedings of Fifty-fourth Anniversary Meeting, 1885	
Wigan Free Public Library. Seventh Annual Report of the Librarian, 1885	The Librarian

JOURNAL OF THE STATISTICAL SOCIETY,

SEPTEMBER, 1885.

REPORT *of the* COUNCIL *for the* FINANCIAL YEAR *ended 31st December*, 1884, *and for the* SESSIONAL YEAR *ending 23rd June*, 1885, *presented at the* FIFTY-FIRST ANNUAL MEETING *of the* STATISTICAL SOCIETY, *held in the Theatre of the University of London, Burlington Gardens, W., on the 23rd of June*, 1885.

The PRESIDENT, SIR RAWSON W. RAWSON, K.C.M.G., C.B., *in the Chair.*

THE Circular convening the Meeting having been read, and the Minutes of the last Ordinary Meeting read and confirmed, the following Report was taken as read:—

Report of the Council.

The Council have the honour to submit their fifty-first annual report.

The results compare as follows with the average of the previous ten years:—

Particulars.	1884.	Average for the Previous Ten Years.
Number of Fellows on 31st December	909	728
Life Members included in the above	150	113
Number lost by death, withdrawal or default	57	45
New Fellows elected	106	78

Since the 1st of January last, 49 new Fellows have been elected.

The financial condition of the Society continues to be satisfactory. The following table gives, for purposes of comparison, the different sources of ordinary income for the year 1884, together with the same particulars for the previous five years:—

Receipts per	1884.	1883.	1882.	1881.	1880.	1879.	Average for the Five Years previous to 1884.
	£	£	£	£	£	£	£
Dividends	88	102	94	88	75	65	84
Annual Subscriptions	1,447	1,361	1,291	1,306	1,317	1,300	1,315
Compositions	294	126	189	84	273	126	159
Journal sales	207	150	227	145	202	176	180
Advertisements in Journal	19	35	37	26	35	31	32
Rent account	45	—	—	—	—	—	—
Fire and lights account	23	—	—	—	—	—	—
Furniture and repairs account	16	4	—	—	—	—	—
	2,139	1,778	1,838	1,649	1,902	1,698	1,770
Sale of 1,000*l.* New 3 per Cent. Stock	1,007						
	3,146	—	—	—	—	—	—

A comparison of the principal figures at intervals of ten years in the following table, will show the progress of the Society from an early date :—

Comparison of Condition of Society at Intervals of Ten Years, on 31st December.

Year.	Number of Fellows.	Ordinary Income.	Expenditure.	Amount Invested.	Liabilities.	Assets over Liabilities.	Year.
		£	£	£	£	£	
1834	398	1,207	1,058	569	—	719	1834
'44	422	859	788	867	236	984	'44
'54	367	896	890	867	111	957	'54
'64	365	749	903	957	136	1,787	'64
'74	588	1,377	1,491	1,507	460	2,359	'74
'84	909	2,139	3,087	2,500	968	4,188	'84

The following table gives the particulars for each year of the last decade :—

Year.	Number of Fellows.	Income.	Expenditure.	Amount Invested.	Liabilities.	Assets over Liabilities.	Year.
		£	£	£	£	£	
1875	607	1,231	1,733*	1,207	216	2,351	1875
'76	611	1,438	1,340*	1,207	187	3,464	'76
'77	683	1,597	1,286	1,398	201	3,763	'77
'78 ...	746	1,732	1,345	1,902	168	4,147	'78
'79 ...	783	1,698	1,427	2,283	238	4,433	'79
'80	808	1,902	1,517†	2,572	214	4,614	'80
'81	807	1,649	1,400	2,869	192	4,935	'81
'82	786	1,838	1,581‡	3,071	203	5,240	'82
'83	860	1,778	1,635‡	3,500	347	5,246	'83
'84	909	2,139	3,087*‡	2,500	968	4,188	'84

* The expenditure of these years was affected by heavy expenses incident to moving into new premises.

† The expenditure of this year was affected by the expenses attending the alteration and redecoration of the meeting room at King's College.

‡ The expenditure of these years was affected by expenses attending the preparation of a new catalogue to the library.

The averages of the annual sales of the Society's *Journal* are as follows:—

	£
For the ten years 1841-50	56
,, '51-60	83
,, '61-70	97
,, '71-80	155
For the last four years '81-84	182

The Inaugural Address of the President was given on the re-assembling of the Society in November, and the papers read and the members elected at each of the monthly meetings were as follows:—

Session 1884-85.

First Ordinary Meeting, Tuesday, 18th November, 1884.

The President, Sir Rawson W. Rawson, K.C.M.G., C.B., in the Chair.

The following were elected Fellows:—

George Baker.
Sir Joseph William Bazalgette, C.B.
Alexander Begg.
James T. Bell.
Robert W. P. Birch, M. Inst. C.E.
Willis Browne.
William Burdett-Coutts.
Joseph Chailley.
J. Chater.
Robert Isaac Finnemore, F.R.G.S.
Hendrik Christiaan Haas.
John Hague.
James Hart.
Thomas Morgan Harvey.
John Robert Hollond, M.P.
James Alfred Jacoby.
Edwin Jones, J.P.
Edward Festus Kelly.
John Kemp.
William McCabe, LL.B., F.I.A.
Edward Garnet Man.
Zachary Merton.
Charles S. Milnes.
Augustus Mongredien.
Mark Oldroyd.
Walter Peace.
Alfred Raphael.
George Eustace Skliros, M.A.
C. W. Spark.
Richard Sugden.
D. F. E. Sykes, LL.B.
Thomas William Tarbet.
William Whiteley.
Charles Wightman.

G. D. Wishart.

The President delivered an Inaugural Address, on "British and "Foreign Colonies," and presented the "Howard Medal" of 1884 (with 20*l.*) to

Dr. Clement Dukes, M.R.C.P., &c., Lond.

for his Essay on:—

"The Preservation of Health as it is affected by Personal "Habits, such as Cleanliness, Temperance, &c."

Second Ordinary Meeting, Tuesday, 16th December, 1884.

The President, Sir R. W. Rawson, K.C.M.G., C.B., in the Chair.

The following were elected Fellows:—

Edward Tancred Agius.
Henry Ashwell.
Edmund Chaplin Baldwin.
James Bedford.
Wilhelm Berg.
Samuel Burbridge.
Sydney Charles Buxton, M.P.
Henry Curtis Card, F.S.I.
Henry Anselm de Colyar.
Edward Samuel Cook.
Charles Edward Curtis.
Donald William Dickson.
George Frederick Felton.
William Thomas Exham Fosbery.
Walter Halsted Frith.
Edward C. Gonner, B.A.
Joseph Hadley.
Hugh Greenwood Hammersley.
Robert Wilkin Hedley.
Alfred Hoare.
Henry Kimber.
Horace Woodburn Kirby, F.C.A.
William Lee.
William Arthur Mason.
W. Targett Morris.
William Blake Odgers, LL.D.
George Henry Ogston.
Frederick Payne.
T. H. Richardson.
Francis Turner.
Richard Veevers.
James Wilson.

C. C. Wyllie.

Mr. J. S. Jeans read a Paper on "The Comparative Efficiency "and Earnings of Labour at Home and Abroad."

Third Ordinary Meeting, Tuesday, 20th January, 1885.

The President, Sir R. W. Rawson, K.C.M.G., C.B., in the Chair.

The following were elected Fellows:—

Emanuel Linden Bordman.	J. Collie Foster.
Joseph Craddock.	Tonman Mosley.
James Cropper, M.P.	John Payne.
George Dibley, junior.	William Willott Popplewell.
William John Dyer.	Gilbert Purvis.
William Elliott.	John Standfield.
William Henry Elliott.	Henry Theobald.

The President introduced to the meeting Mr. William Watt, the Newmarch Memorial Prize Essayist, and presented to him the Prize, viz.—a cheque for 100*l.*—the title of the Essay being:—

"On the Extent to which Recent Legislation is in accordance "with, or deviates from, the True Principles of Economic Science: "and showing the Permanent Effects which may be expected to "arise from such Legislation."

Mr. Stephen Bourne (one of the Referees) read selected portions of the "Newmarch Memorial Prize Essay."

Fourth Ordinary Meeting, Tuesday, 17th February, 1885.

The President, Sir R. W. Rawson, K.C.M.G., C.B., in the Chair.

The following were elected Fellows:—

Philip H. Bagenal.	William Brock Keen.
David Brown.	Robert Muir.
William A. Casson.	Walter H. Pitman.
John Hay.	Adam Kier Rodger.
William Alfred Hunter, LL.D.	Joseph Henry Sherwin.

William Watt.

Sir Richard Temple, Bart., G.C.S.I., read a Paper on "Popula- "tion Statistics of China."

Fifth Ordinary Meeting, Tuesday, 17th March, 1885.

The President, Sir R. W. Rawson, K.C.M.G., C.B., in the Chair.

The following were elected Fellows:—

Charles Booth.	Henry Jackson.
Arthur Francis Burridge, F.I.A.	Harold E. Moore.
Jenkin Howell.	E. Montague Nelson.

Paul Pierrard.

Mr. E. G. Ravenstein read a Paper "On the Laws of Migration."

Sixth Ordinary Meeting, Tuesday, 21st April, 1885.

The President, Sir R. W. Rawson, K.C.M.G., C.B., in the Chair.

The following were elected Fellows:—

James Bonar, M.A.
William Purdham Goulding, F.S.I.
Edwin Guthrie.
Ellis Lever.
D. M. Luckie.
Thomas S. Robertson.

Mr. E. W. Brabrook read a Paper on "The Relation of the "State to Thrift; Ten Years' Statistics of Friendly Societies and "similar Institutions."

Seventh Ordinary Meeting, Tuesday, 19th May, 1885.

The President, Sir R. W. Rawson, K.C.M.G., C.B., in the Chair.

The following were elected Fellows:—

Thomas D. G. Carmichael, M.A.
Thomas H. Devonshire.
Charles Hancock, M.A.
Baldwin Latham, M. Inst. C.E.
James S. Randell.
John D. Scott, B.A.

Mr. A. K. Connell, M.A., read a Paper on "Indian Railways "and Indian Wheat."

Eighth Ordinary Meeting, Tuesday, 16th June, 1885.

Dr. T. Graham Balfour, F.R.S., Vice-President, in the Chair.

The following were elected Fellows:—

Harbhamji Kumar.
James Law.
William Ogle, M.A., M.D.
Russell R. Tanner, A.M.
Walter Abbott Tipping.

Mr. R. Price-Williams read a Paper on "The Population of "London, 1801-81."

The Council have much pleasure in recording a continued increase in the numerical strength of the Society, the total of the muster-roll, 930, being 70 in excess of the total of last year, and 135 in excess of that of 1883; at the same time they earnestly hope that no efforts will be wanting on the part of the Fellows

generally to increase the strength and efficiency of the Society, in order that its work in the future may maintain the standard of excellence that it has attained in the past. It must also be borne in mind that the recent change of premises will entail increased annual expenditure on the Society, which can be adequately met only by maintaining and increasing the number of its Fellows.

The tabulated comparison of the sources of income of 1884 shows a satisfactory increase of 86*l.* in annual subscriptions, of 168*l.* in compositions, and of 57*l.* in *Journal* sales; but a decrease of 14*l.* in dividends, representing the loss of a half year's dividend on 1,000*l.* New Three per Cent. stock which it was necessary to sell in consequence of the expenses entailed during removal from King's College, and by the compilation of the Library Catalogue and Index. By this reduction the invested funds of the Society now stand at 2,500*l.* stock.

The transfer of the Society from King's College to Adelphi Terrace, which was in contemplation at the time of issue of the last report, was satisfactorily carried out, and the Council hope that the advantages to be reaped from the more adequate housing of the Library will fully repay the heavy cost incurred in connection with the removal, and the additional charge in respect of rent, &c., that has been unavoidably incurred. The question as to the liability or otherwise of the Society for rates under the Act 6 and 7 Vict., cap. 36, has been carefully considered, and is now in the hands of the solicitors of the Society. The Council are pleased to be able to report that their present premises continue to be shared by the Society of Actuaries and the Institute of Chemistry as before.

Permission to hold the ordinary meetings of the Society in the Theatre of the School of Mines in Jermyn Street has been continued to the Society, through the courtesy of the Education Department. The Council are of opinion that the thanks of the Society are due to the Vice-President of the Department, the Right Hon. A. J. Mundella, M.P., for the accommodation thus placed at its disposal.

Shortly after the issue of the last report, the Catalogue of the Library was placed in the hands of the Society; and the Council are pleased to report that good progress has been made with the Index. The Library Committee are endeavouring to make this most important adjunct to the Catalogue as complete as possible, and are anxious at the same time to lose no time in its completion. It is satisfactory that the additions to the Library continue to increase in number and importance.

The Prize of 100*l.* liberally offered by Mr. Pochin for the best essay—

"On the Extent to which Recent Legislation is in accordance
" with, or deviates from, the True Principles of Economic
" Science; and showing the Permanent Effects which may
" be expected to arise from such Legislation,"

in competition for which six essays were received, was awarded to

Mr. William Watt, of Aberdeen.

An abstract of his Essay will appear in a future number of the Society's *Journal*.

In accordance with the resolution of the Council announced in their last report, the Howard Medal has been this year held in suspense.

The Industrial Remuneration Conference, instituted for the purpose of inquiring into the condition of the present distribution of wealth, was held in London on the 28th, 29th, and 30th January last. The original trustees were Sir Thomas Brassey, M.P., Mr. J. Burnett, Mr. Thomas Burt, M.P., Lord Dalhousie, Mr. Robert Giffen, Professor H. S. Foxwell, and Mr. Frederic Harrison, and under the conditions of the trust seven members of the committee, viz.:—

Stephen Bourne, Esq.,
Rev. W. Cunningham, M.A.,
David Dale, Esq.,
Professor Leone Levi, LL D.,
F. G. P. Neison, Esq.,
Sir R. W. Rawson, K.C.M.G., C.B., and
Major C. T. Ritchie, M.P.,

were appointed by the Statistical Society, which lent its premises for the preliminary work of the conference; the papers read at the conference will shortly be published.

Widely divergent theories found expression at the conference, but there was considerable unanimity in the expression of opinion that there is in this country a lamentable deficiency of statistical data on all topics dealing with the employment and remuneration of labour, as compared with those furnished by more than one foreign country. This question has engaged the attention of the Council of the Statistical Society, and a letter has been addressed by it to the Secretary of the Board of Trade, calling his attention to this very important subject, and suggesting that the advice and aid of the Chambers of Commerce should be invited in regard to the manner in which such statistics should be collected and

analysed; and further, that valuable assistance might be obtained by means of Her Majesty's Factory Inspectors, and other officially constituted bodies.

The Corporate Property Security Bill, introduced by the Right Hon. Sir Charles W. Dilke, M.P., President of the Local Government Board, has been brought under the notice of the Council, as affecting the status of voluntary societies: and its provisions, as bearing on the Statistical Society, are under consideration.

The arrangements in connection with the celebration of the Society's Jubilee, postponed from 1884 owing to the lamented death of H.R.H. the Duke of Albany, have engaged the constant attention of the Jubilee Sub-Committee; the Council are confident that preparations have been made for giving a suitable reception to the many distinguished guests who have promised their attendance.

The papers submitted to the consideration of the Society were in excess of the average in point of numbers, and not inferior to the average in point of merit; the address of the President, on "British and Foreign Colonies," called opportune notice to the magnitude of our imperial interests and duties, while the papers of Mr. J. S. Jeans on "The Comparative Efficiency and Earnings "of Labour at Home and Abroad," of Mr. Ravenstein on "The "Laws of Migration," Mr. E. W. Brabrook on "The Relation of "the State to Thrift," were eminently appropriate to the subjects treated at the Industrial Remuneration Conference.

The holding of the meeting of the British Association at Montreal did not prevent the Society from being, as usual, very well represented at the meeting: Sir Richard Temple, Bart., G.C.S.I., &c., &c., &c., presided over Section F (the Statistical and Economic Section), and papers were read, among others, by Mr. Stephen Bourne, Mr. Hyde Clarke, Major Craigie, Mr. John B. Martin (vice-president), Mr. M. G. Mulhall, Mr. T. B. Sprague, F.I.A., Mr. Cornelius Walford, and Mr. William Westgarth. The Society was also well represented at the meeting of the National Association for the Promotion of Social Science at Birmingham, to which Mr. Bateman and Mr. Jeans were appointed delegates of the Society, and at which papers were read, among others, by Mr. G. W. Hastings, M.P., Mr. R. Denny Urlin, Professor Leone Levi, Mr. A. E. Bateman, Mr. Rowland Hamilton, and Mr. Noel A. Humphreys.

Mr. John B. Martin and Major Craigie were appointed delegates of the Society to the meeting of the American Association for the Advancement of Science, at Philadelphia, in September, where they met with a very cordial reception. Mr. John B. Martin contributed a paper on "The Future of the United States," to the Economic Section.

The Society has to lament the deaths of the following members :—

Fellows.

M. T. Bass.
H. G. Bolam.
(*c*) John B. Carter.
(*d*) Major-Gen. J. C. Hannyngton.
A. C. Hooper.
(*d*) Sir W. Jones, Bart.
Thomas Lane.
Henry Jackson Moore.
Right Hon. Lord O'Hagan.
Jervoise Smith.
(*d*) Robert Thubron.
Major Q. Vivian.
(*d*) Rev. R. Bailey Walker.
Thomas M. Weguelin.
His Grace the Duke of Wellington.
William Whiteford.

Honorary Members.

(*d*) Dr. Edward Jarvis (United States).
Dr. Emilio Morpurgo (Italy).

(*c*) Indicates those who on one or more occasions had served on the Council.
(*d*) Indicates those who had been Donors to the Library.

The following list of Fellows proposed as President, Council, and Officers of the Society for the Session 1885-86 is submitted for the consideration of the meeting:—

Council and Officers for 1885-86.

PRESIDENT.

SIR RAWSON W. RAWSON, K.C.M.G., C.B.

COUNCIL.

George S. Baden-Powell, M.A., C.M.G.
Arthur H. Bailey, F.I.A.
T. Graham Balfour, M.D., F.R.S.
Alfred Edmund Bateman.
Stephen Bourne.
J. Oldfield Chadwick, F.R.G.S.
Hammond Chubb, B.A.
Hyde Clarke.
*Lionel Louis Cohen.
Major Patrick George Craigie.
*William Fowler, M.P.
Professor H. S. Foxwell, M.A.
*Frederick Brooksbank Garnett.
*John Glover.
Rowland Hamilton.
Frederick Hendriks.
Noel A. Humphreys.
*Frederick Halsey Janson.
James Stephen Jeans.
Robert Lawson.
Professor Leone Levi, LL.D.
George Blundel Longstaff, M.A., M.B.
John Biddulph Martin, M.A.
Richard Biddulph Martin, M.P.
Frederic John Mouat, M.D., F.R.C.S.
Francis G. P. Neison.
Henry Davis Pochin.
R. Price-Williams, C.E.
Ernest George Ravenstein, F.R.G.S.
*Sir Richard Temple, Bart., G.C.S.I., D.C.L., LL.D.

Those marked * are new Members of Council.

TREASURER.

Richard Biddulph Martin, M.P.

SECRETARIES.

John B. Martin, M.A. | A. E. Bateman.
G. S. Baden-Powell, M.A., C.M.G.

FOREIGN SECRETARY.

John Biddulph Martin, M.A.

The abstract of receipts and payments, and the balance sheet of assets and liabilities on 31st December, 1884, are subjoined, together with the report of the Auditors on the accounts for the year 1884:—

(I.)—ABSTRACT *of* RECEIPTS *and* PAYMENTS *for the* YEAR *ending* 31*st* DECEMBER, 1884.

RECEIPTS.	£	s.	d.
Balance in Bank, 31st December, 1883 ... £116 16 –			
Balance of Petty Cash. 6 17 5			
	123	13	5
Dividends on New 3 per Cent. Stock	88	2	7
Subscriptions received:—			
48 Arrears ..... £100 16 –			
602 for the year 1884..... 1,264 4 –			
39 in Advance ..... 81 18 –			
689	1,446	18	–
14 Compositions	294	–	–
Journal Sales	207	–	4
Advertisements in Journal	19	13	9
Rent Account	44	15	–
Fire and Lights Account	23	3	6
Furniture and Repairs Account ...	15	16	7
	£2,263	3	2
£1,000 New 3 per Cents sold at £100⅜	1,007	10	–
Total	£3,270	13	2

PAYMENTS.	£	s.	d.
Rent ..... £120 5 –			
Less sublet ..... 165 – –			
			(See *contra*)
Salaries, Wages, and Pension	485	15	–
Journal, Printing £580 17 11			
,, Annual Index 5 5 –			
,, Shorthand Reporters 19 8 6			
,, Literary Services 39 5 –			
	644	16	5
Advertising	87	12	9
Ordinary Meeting Expenses	23	19	8
Library	37	19	9
Stationery and Sundry Printing ...	78	15	2
Postage and delivery of Journals...	81	19	8½
Fire and Lights	—		
Incidental Expenses	64	16	10½
Furniture and Repairs.....	—		
Rates	55	18	9
Howard Medal	23	3	–
	1,584	17	1
Expenses incidental to moving into 9, Adelphi Terrace	1,202	13	4
New Catalogue of Library. Payment on account	300	–	–
	£3,087	10	5
Balance at Drummond's 170 6 11			
Balance of Petty Cash 10 8 3			
Balance of Postage Account 2 7 7			
	183	2	9
Total	£3,270	13	2

(Signed) "J. O. CHADWICK,
"G. HARVEY SIMMONDS,
"F. Y. EDGEWORTH,
Auditors."

"24*th February*, 1885.

(II.)—Balance Sheet *of* Assets *and* Liabilities, *on* 31*st* December, 1884.

LIABILITIES.	£	s.	d.	£	s.	d.
Harrison and Sons—						
Journal Account	181	7	6			
Miscel. Printing Account	21	14	–			
Catalogue of Library Account ...	158	12	9			
Index to Library	15	1	–			
C. and E. Layton, Stationery, &c.	23	15	5			
Street Bros., Advertisements	14	12	–			
Mitchell and Sons, Books, &c.	5	10	11			
Dove Bros., Gas Fittings	18	18	3			
King's College, Gas, Water, &c.	64	8	–			
Newmarch Memorial Prize	100	–	–			
Mr. Bailey, Annual Index to Journal ...	5	5	–			
Miscellaneous (as per List)	276	13	3			
				885	18	1
48 Annual Subscriptions received in advance				81	18	–
				967	16	1
Balance in favour of the Society...				4,187	16	7
				£5,155	12	8

ASSETS.		£	s.	d.
Cash Balances		183	2	9
2,500*l.* New 3 per Cents, costing...		2,371	13	11
Property: Estimated Value of, viz.—				
Books in Library (about 20,000 vols.)	£1,000			
Journals, &c., in Stock...	500			
Furniture and Fixtures	500			
		2,000	–	–
Lease of Premises		500	–	–
Arrears of Subscriptions recoverable (say)		100	16	–
		£5,155	12	8

(III.)—Building Fund (Established 10*th July*, 1873), Balance Sheet, *on* 31*st* December, 1884.

LIABILITIES.	£	s.	d.
Amount of Fund Invested from last Account	186	9	3
Dividends Received during 1884 ...	6	5	8
	£192	14	11

ASSETS.		£	s.	d.
Invested as per last Account in Metropolitan Consolidated 3½ per Cent. Stock, in the name of the Treasurer, R. B. Martin, Esq., M.P.—				
	£181 6 5 cost	186	9	3
Purchased during the year.....	5 11 6 „	6	5	8
	£186 17 11	£192	14	11

(Signed) "J. O. Chadwick,
"G. Harvey Simmonds,
"F. Y. Edgeworth,
} *Auditors.*"

"24*th February*, 1885.

"REPORT OF THE AUDITORS FOR 1884.

"STATISTICAL SOCIETY,

"*24th February*, 1885.

"*The Auditors appointed to examine the Treasurer's Accounts of the Society for the Year* 1884,

"REPORT:—

"*That they have compared the Entries in the Books with the several Vouchers for the same, from the 1st January to the 31st December*, 1884, *and find them correct, showing the Receipts (including a Balance of* 123*l.* 13*s.* 5*d. from* 1883) *to have been* 3,270*l.* 13*s.* 2*d., and the Payments* 3,087*l.* 10*s.* 5*d., leaving a balance in favour of the Society of* 183*l.* 2*s.* 9*d., at 31st December*, 1884.

"*They have also had laid before them an Estimate of the Assets and Liabilities of the Society at the same date, the former amounting to* 5,155*l.* 12*s.* 8*d., and the latter to* 967*l.* 16*s.* 1*d., leaving a balance in favour of the Society of* 4,187*l.* 16*s.* 7*d.*

"*The amount standing to the credit of the Building Fund at the end of the year* 1884, *was* 192*l.* 14*s.* 11*d., invested in Metropolitan Three and a Half per Cent. Stock, in the Name of the Treasurer, R. B. Martin, Esq., M.P.*

"*They further find that at the end of the year* 1883 *the number of Fellows on the list was* 860, *which number was diminished in the course of the year to the extent of* 57, *by Deaths, Resignations, and Defaulters, and that* 106 *new Members were elected, leaving on the list on the 31st December*, 1884, 909 *Fellows of the Society.*

(Signed) "J. O. CHADWICK,
"G. HARVEY SIMMONDS,
"F. Y. EDGEWORTH,
} *Auditors.*"

PROCEEDINGS *of the* FIFTY-FIRST ANNIVERSARY MEETING.

The PRESIDENT moved that the Report of the Council, the Abstract of Receipts and Payments, the Balance Sheets of Assets and Liabilities, and the Report of the Auditors for 1884 be adopted, entered in the minutes, and printed in the *Journal*.

Dr. T. GRAHAM BALFOUR seconded the motion.

Mr. HENRY C. BURDETT wished to call attention to the procedure in the election of Fellows during recent years. Among those elected were some gentlemen whom he could not recognise as statisticians. He took a very exalted view of the worth of statistics, and claimed the President as a supporter of that view, because in his Address the President said it would be well if the anniversary could be made so important that statistics might be emphasised as a science; and Dr. Mouat suggested that the Society might be raised to the level of the Royal Society. He was also justified by the Rules in taking a high view of what ought to constitute the value of the Fellowship of the Society. In Rule 6

it was provided that each Fellow should be required to subscribe a statement that he would endeavour to further the good of the Society and the aims for which it had been founded; and Rule 1 set forth as the object of the Society "to collect, arrange, digest, and publish facts illustrating the condition and prospects of society in its material, social, and moral relations." He ventured to say that it was somewhat lamentable that at the time of its Jubilee festival, and fifty years after its foundation, the Society should be humiliated by constantly seeing in the papers advertisements of tradesmen who added to their names the letters "F.S.S." One of the Honorary Secretaries had told him that as a pecuniary matter it was imperatively necessary to increase the number of Fellows; but he thought that in conferring the honour of Fellowship some regard should be paid to the purposes and objects of the Society; and if after his election a Fellow used his position for advertising purposes, the Rule should be put in force which enabled the Council to take notice of such proceedings, and if it was considered necessary, to bring the matter before the Fellows. Possibly he might take an unduly high view of the dignity which ought to attach to their Fellowship; but there were many who were quite prepared to provide the Society with funds if proper care was taken to make the Society of scientific value, and to prevent its Fellowship being regarded as three letters which anyone might purchase the right to use on payment of Two Guineas per annum. He hoped that there would be a new departure from the date of this Jubilee meeting. Another point which he wished to bring to the notice of the meeting was that he did not think sufficient provision was made for the encouragement of young statisticians. He knew that the arrangements for the Jubilee festival had not admitted of a paper of international value being read by an unknown because a young Fellow of the Society. If the young members were not encouraged how could the Society live? He hoped that the new Members of Council would devote their attention to ascertain (1) if funds could not be obtained by admitting associates who should not have the right to put F.S.S. after their name, and so (2) to enable young and capable statisticians to take advantage of the Society. Unless these points were attended to, Dr. Mouat would have to admit that it was little short of madness to hope that the Society could ever claim an equal rank with the Royal Society. He would not move an amendment, but he hoped that this expression of the views which were held by a great number of Fellows would have its weight with the Council, and that before the next Anniversary Meeting these points would be taken into consideration.

Mr. F. D. Askey wished to call attention to the publication in a separate form of the recent paper by Dr. Guy, entitled "Two Hundred and Fifty Years of Small Pox in London," which was full of misleading statistics and altogether fallacious in its arguments. It appeared to have been published simply with the view of pushing the practice of vaccination before the public.

Mr. C. Walford said he was much obliged to Mr. Burdett for

the observations he had made, and he had no doubt that much good would result from them.

The PRESIDENT said the observations which had just been made would be taken into consideration by the Council, and he thanked the members who had taken sufficient interest in the welfare of the Society to raise these points.

Mr. J. B. MARTIN pointed out that it was not the Jubilee but the usual annual meeting which had called together the twenty now present, and he did not know whether it would be right to measure the amount of support which Mr. Walford received by the attendance. He was sure Mr. Burdett's suggestions would be thoroughly considered, and the Council would endeavour to the best of their ability to steer a middle course between the two points suggested by him: to open the doors so as to admit youthful talent, and to shut them closer so as to keep out objectionable candidates.

The resolution was carried unanimously.

Mr. Chadwick and Mr. Farmer were appointed Scrutineers of the ballot.

Mr. CLARKE asked if there was any objection to the name of the responsible Editor of the *Journal* appearing.

The PRESIDENT said the Council was responsible for the Miscellaneous Statistics in the *Journal*.

The PRESIDENT announced the Scrutineers had reported that all the persons named in the printed list submitted to the meeting had been duly elected to serve as the President, Council, and Officers for the ensuing year.

A vote of thanks was given to the Scrutineers of the ballot for their services.

Rev. W. CUNNINGHAM proposed a vote of thanks to the President, Council, and Officers of the Society for their services during the past year. It had been a specially arduous year, because of the preparation for the Jubilee Meeting; and looking at the programme that had been brought out for the three days, he thought that the members had every reason to thank those who had been responsible for it most cordially.

Mr. BURDETT seconded the motion. He was connected with many societies, but knew of none that exacted so much attention from its officers.

The resolution was carried unanimously.

The PRESIDENT on behalf of his colleagues and the Council thanked the meeting for the vote, and particularly Mr. Burdett for having seconded it, after a criticism which he was quite willing to accept as a friendly one. It was not in this Society alone that the question of admission for the annual subscription had become a matter of very great importance and consideration.

MAP OF LONDON & SUBURBS

SHEWING THE

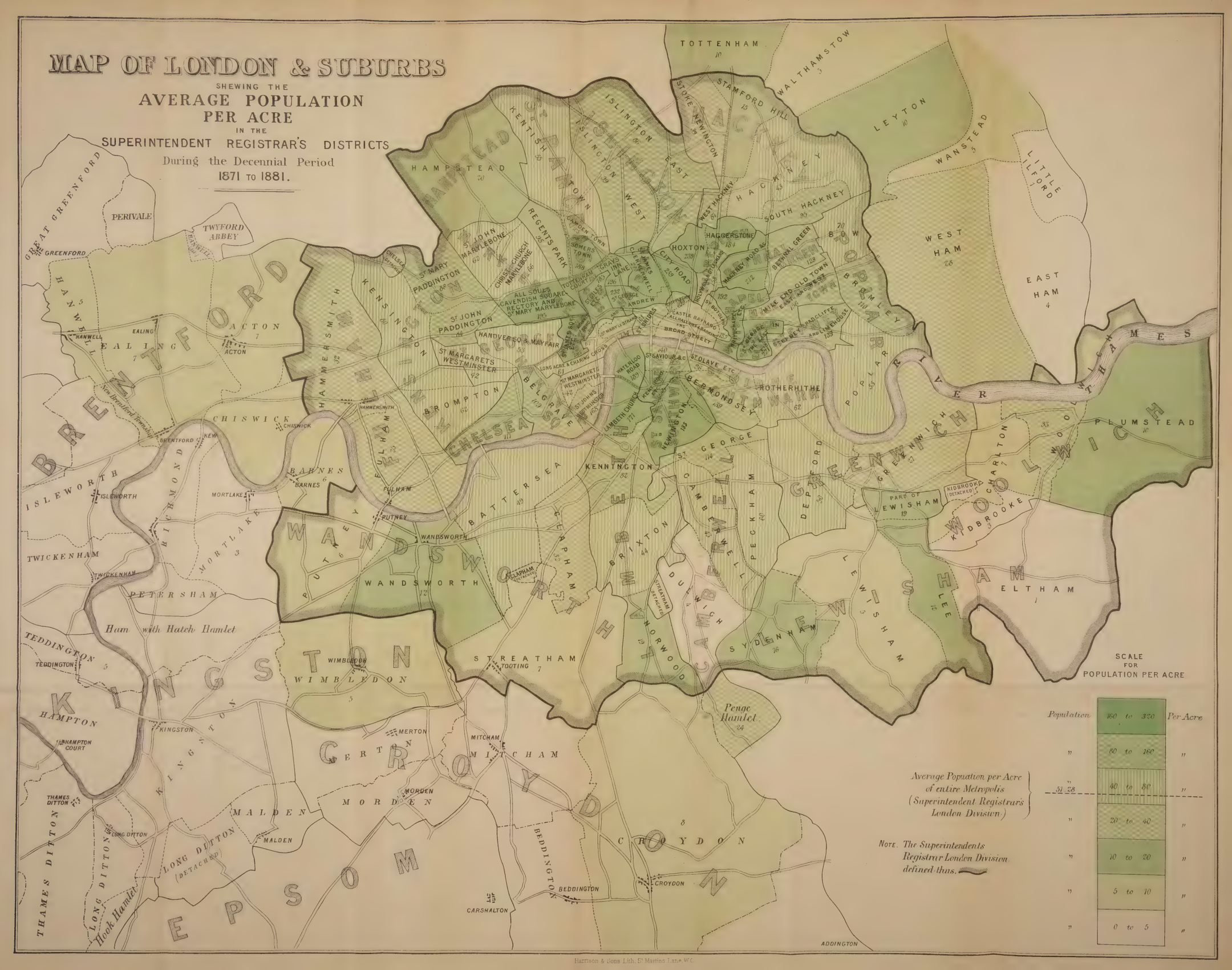
AVERAGE POPULATION PER ACRE

IN THE

SUPERINTENDENT REGISTRAR'S DISTRICTS

During the Decennial Period

1871 TO 1881.



SCALE FOR POPULATION PER ACRE

Population		Per Acre
	160 to 320	
"	80 to 160	"
"	40 to 80	"
51.58		
"	20 to 40	"
"	10 to 20	"
"	5 to 10	"
"	0 to 5	"

Average Population per Acre of entire Metropolis (Superintendent Registrar's London Division)

NOTE. *The Superintendents Registrar London Division defined thus.*

Harrison & Sons Lith. St Martins Lane W.C.

MAP OF LONDON & SUBURBS

SHEWING THE

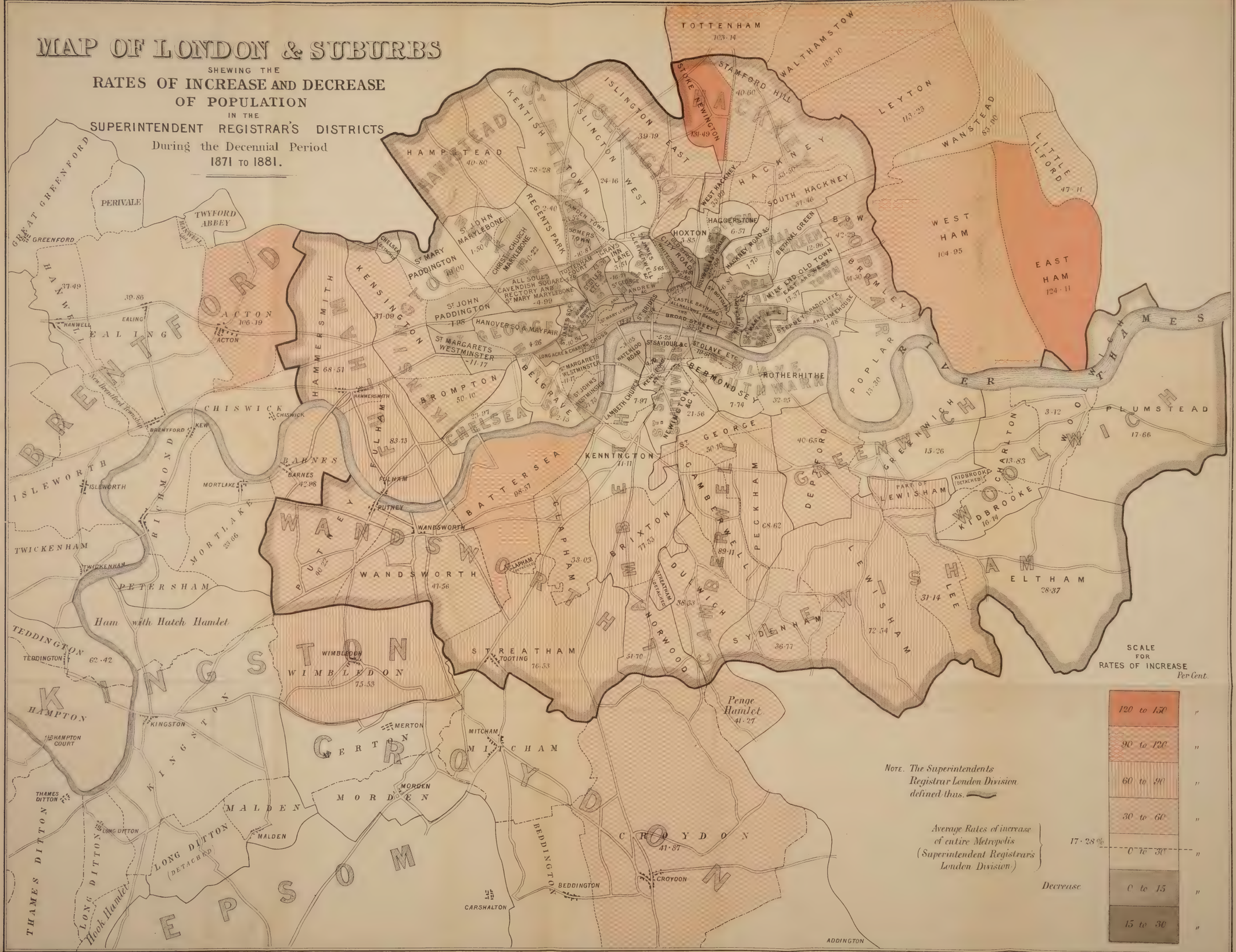
RATES OF INCREASE AND DECREASE OF POPULATION

IN THE

SUPERINTENDENT REGISTRAR'S DISTRICTS

During the Decennial Period

1871 TO 1881.



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The Population *of* London, 1801-81.

By R. Price-Williams, Esq., M. Inst. C.E.

[Read before the Statistical Society, 16th June, 1885. Dr. T. Graham Balfour, F.R.S., a Vice-President, in the Chair.]

The very scanty information afforded in the earlier census returns, and the extensive alterations in the arrangement and grouping of the different sub-districts in those of 1871 and 1881, have made it a matter of some difficulty to trace with any detail the various changes which have occurred in the population of the different districts of the metropolis prior to 1841.

In the census returns for 1831, whatever little information is afforded is given under the heads of the different hundreds in the respective counties: Marylebone, Holborn, St. Pancras, St. Luke's, Hampstead, Islington, and many other widely distant districts for instance, all appear under the head of "Ossulstone Hundred," in the county of Middlesex; scarcely any particulars are furnished of the number of houses in the different sub-districts, and no information whatever is given of the areas of either districts or sub-districts.

In the census returns of 1841 the first attempt is made to give the areas of the registration districts; the information however afforded proves, as the subsequent census returns show, that the areas are in nearly all cases incorrect; the acreage given being as a rule considerably in excess.

It is somewhat remarkable that although the ordnance survey of the metropolis was completed in 1856, it was not until the census of 1881 that the full advantage was obtained of the extreme accuracy of the large scale ordnance maps in determining the exact areas of the different districts.

The area included within the bills of mortality at the beginning of the present century was 21,587 acres. In 1831 these limits were extended, and the outlying parishes of Chelsea, Kensington, Paddington, Marylebone, and Pancras were added, increasing the area to 30,002 acres.*

In the census returns for 1841, Bow, Bromley, Camberwell, Deptford, Hatcham, Fulham, Greenwich, Hammersmith, Stoke Newington, and Woolwich, were for the first time included within the metropolitan area, the total acreage including these additions being thereby increased to 44,850 acres.

* *Vide* "Lewis's Digest of English Census, 1871."

In the following census of 1851 further very large additions were made to the suburban districts in the cases of Hampstead, Bow, Bromley, Clapham, Wandsworth, Streatham, Lewisham, and Plumstead, thereby increasing the total area to 75,343 acres, and to 74,427 acres exclusive of water area.* Since then no additions have been made. It should be noted that in the census returns for 1851 particulars are furnished of the population embraced by this extended area for each of the preceding decades back to 1801.

The census returns for 1851 mark in fact the beginning of quite a new era in the science of population statistics, and the Registrar-General's report for that year, with the elaborate and remarkable series of tables, maps, and diagrams which accompany it, will always remain a monument of the genius of Dr. Farr.

The important question of the areas of the registration districts was now for the first time properly dealt with, and in determining the areas of the different metropolitan parishes (as appears from Major Dawson's, R.E., interesting letter to the Registrar-General given in the appendix to the report†) recourse was had to the plans made by the Board of Ordnance for the Metropolitan Commissioners of Sewers, and the parochial boundaries were carefully drawn from the best published and private plans that could be obtained.

That the areas given in this census were still far from being correct will be seen by comparing them with those given for the subsequent decades, as shown in the following summary of Table A,‡ from which it appears that the area of the registration districts of the metropolis given in the census returns for 1851 is considerably larger than in 1881, the difference being entirely due to incorrect measurement :—

Total Area of the London Registration Districts.

	1851.	1861.	1871.	1881.
	Acres.	Acres.	Acres.	Acres.
Area including water	78,029	77,997	75,362	75,334
„ excluding „	75,260	75,219	74,445	74,427

In calculating the population per acre in the different regis-

* The acreages given in the census return for 1851 were :—

Including water	78,029
Excluding „	75,260
Water area.....	2,769

† *Vide* p. clx appended to report, 1851.

‡ See Table A, Appendix.

tration districts and sub-districts for all the previous decades, the writer of this paper has adopted the corrected areas of the last census of 1881, exclusive of the water area.

The extensive alterations made in the registration districts in 1871, and which will presently be referred to, has necessitated a corresponding rearrangement of the districts for all the previous decades.

Table B in the Appendix gives the population and the increase of the population per decade in each district and sub-district within the metropolis from 1801 to 1881, arranged in the order given in the last census returns.

Table B* is a summary of the above, giving only the rates of increase for each entire registration district.

Table C gives the population per acre for each registration district (and for such of the sub-districts as are given separately in the earlier census returns) from 1801 to 1881.

The population per acre, number of houses per acre, and number of people per house for each of the districts and sub-districts included within the metropolitan area for each decade from 1841 to 1881 are given in Table D, the imperfect information afforded rendering it impossible to prepare similar information in regard to the preceding decades.

In considering the changes which have occurred in the population of the different metropolitan registration districts, it will be best to take them in the order given in the census returns.

Kensington.

In 1841 the sub-district of Paddington was divided into the two sub-districts of St. Peter and St. Paul; that of Kensington into Kensington Town and Brompton; Hammersmith into the two sub-districts of St. Peter's and St. Paul's; making altogether with Fulham a total of seven sub-districts.

In 1881 Kensington was formed into the two new districts of Kensington and Fulham; the former containing the four sub-districts of St. Mary, Paddington; St. John's, Paddington; Kensington Town, and Brompton; the latter comprising the sub-districts of St. Peter's, Hammersmith, and Fulham.

The new district of Kensington has an area of 3,418 acres, the population of which in 1801 was only 10,437, or 3 people per acre. In 1881 it had increased to 270,369, and to 79 people per acre, the amount of the increase between 1861 and 1871 being, with the exception of that in Wandsworth and Camberwell, the largest which has occurred in any district during the present century.*

* See Table, p. 375.

Decade.	Acreage, ex-Water.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801.....	3,418	10,437	—	—	—	3·05	—
'11.....	,,	15,495	48·46	5,058	—	4·53	—
'21.....	,,	20,904	34·91	5,409	—	6·12	—
'31.....	,,	35,442	69·55	14,538	—	10·37	—
'41.....	,,	52,007	46·74	16,565	2·13	15·22	7·15
'51.....	,,	90,358	73·74	38,351	3·58	26·44	7·38
'61.....	,,	145,892	61·46	55,534	5·61	42·68	7·61
'71.....	,,	217,112	48·82	71,220	8·07	63·52	7·87
'81.....	,,	270,369	24·53	53,257	9·77	79·10	8·09
	—	—	—	259,932	—	—	—

The two sub-districts of Paddington, having an area of 1,232 acres, were at the beginning of this century quite suburban, with a total population of only 1,881, or just 1·53 persons per acre: very much what the population of the remote sub-district of Eltham is at the present time. The population in 1881 was 107,218,* or 87 persons per acre. The increase during the first three decades of the present century was very rapid, the population much more than doubling itself (145·03 per cent. increase) in the first decade, and again more than doubling (124·52 per cent. increase) between 1821 and 1831.

The increase during the next four decades has been equally remarkable; although the percentage of increase has during that period been somewhat less, the decennial increments have been very large.

Paddington. Sub-Districts of St. Mary and St. John.

Decade.	Acreage, ex-Water.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801.....	1,232	1,881	145·03	—	—	1·53	—
'11.....	,,	4,609	40·51	7,728	—	3·74	—
'21.....	,,	6,476	124·52	1,867	—	5·26	—
'31.....	,,	14,540	72·13	8,064	—	11·80	—
'41.....	,,	25,173	83·95	10,633	2·82	20·43	7·24
'51.....	,,	46,305	63·66	21,132	4·95	37·59	7·59
'61.....	,,	75,784	27·75	29,479	7·86	61·51	7·82
'71.....	,,	96,813	10·75	21,029	9·62	78·58	8·17
'81.....	,,	107,218		10,405	10·74	87·03	8·15
Total increase	—	—	—	105,337	—	—	—

* See Table C, Appendix.

During the last two decades the increase has been very much less. This is attributable to the falling off in the population of St. John's parish, where there has been a slight decrease,* the population per acre having fallen from 86 to 85 people per acre. The increase in St. Mary's has been considerably less during the last decade, and there is everything to indicate that in Paddington, as in some of the other better class of residential districts, the maximum limit of the population per acre has been nearly reached, and that the rate of increase will for the future continue to diminish.

The number of houses per acre in St. Mary's parish has increased from 1·19 in 1841 to 10·14 in 1881, whereas in St. John's it has only just doubled in that period.*

St. Mary's, Paddington (Sub-District).

Decade.	Acres.	Population.	House per Acre.	Population per Acre.	Population per House.
1881	791	69,888	10·14	88·35	8·71
'41	„	6,436	1·19	8·12	6·85
Increase	—	63,452	8·95	80·23	1·86

St. John's, Paddington (Sub-District).

Decade.	Acres.	Population.	House per Acre.	Population per Acre.	Population per House.
1881	441	37,330	11·81	84·65	7·17
'41	„	18,737	5·76	42·49	7·38
Increase	—	18,593	6·05	42·16	Decrease. 0·21

In the other two sub-districts of Kensington and Brompton, the population of which, as in the case of Paddington, is not given separately in the census returns prior to 1841, the rates of increase were relatively small during the first three decades of this century. But as will be seen from the following statement, "Kensington "Town" during the next twenty years (1841-61) just trebled its population, and the increase in 1871 was especially remarkable. During the last decade, however, the rate of increase has considerably diminished.

* See Table D, Appendix.

Kensington Town (Sub-District).

Decade.	Acres.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1841	1,493	17,369	—	—	1·61	11·63	7·26
'51	,,	29,183	68·02	11,814	2·67	19·55	7·32
'61	,,	51,910	77·88	22,727	4·63	34·77	7·51
'71	,,	91,645	76·55	39,735	7·82	61·38	7·85
'81	,,	120,141	31·09	28,496	9·43	80·47	8·53
		—	—	102,772	—	—	—
Average rate of increase per decade (initial and terminal years)		—	62·17	—	55·82	62·18	4·11

The increase of the population in the sub-district of Brompton since 1841, although not so rapid as in the case of Kensington Town, has been very large.

Brompton (Sub-District).

Decade.	Acres.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1841	693	9,465	—	—	2·03	13·66	6·74
'51	,,	14,870	57·11	5,405	3·10	21·46	6·92
'61	,,	18,198	22·38	3,328	3·71	26·26	7·08
'71	,,	28,654	57·46	10,456	5·85	41·35	7·07
'81	,,	43,010	50·10	14,356	8·78	62·06	7·07
		—	—	33,545	—	—	—
Average rate of increase per decade (initial and terminal year)		—	46·00	—	44·21	46·00	1·20

Fulham.

The total area of this new district, comprising the sub-districts of St. Peter's and St. Paul's, Hammersmith and Fulham, is 3,996 acres. Its population in 1801 was 10,028, or 2·51 persons per acre; it increased very slowly up to 1841, during which period the population only a little more than doubled itself.

During the next two decades (1841-61) the population increased much more rapidly, the rate of increase in the former decade being over 30 per cent., and in the latter over 35 per cent. The most remarkable increase occurred during the two succeeding (1861-81) decades, the population in that period nearly trebling itself, having increased from 40,058 to 114,839, or 186·69 per cent. It should be observed that the greater portion of this large increase occurred

in the sub-districts of St. Paul's, Hammersmith, and Fulham, the increase in the former being 78·58 per cent., and in the latter as much as 83·73 per cent.*

Decade.	Acres, ex-Water.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	3,996	10,028	—	—	—	2·51	—
'11	,,	13,296	32·59	3,268	—	3·33	—
'21	,,	15,301	15·08	2,005	—	3·83	—
'31	,,	17,539	14·63	2,238	—	4·39	—
'41	,,	22,772	29·84	5,233	0·92	5·70	6·18
'51	,,	29,646	30·18	6,874	1·23	7·42	6·04
'61	,,	40,058	35·14	10,412	1·66	10·02	6·03
'71	,,	66,041	64·86	25,983	2·55	16·61	6·48
'81	,,	114,839	73·89	48,798	4·10	28·74	7·02
Total increase....	—	—	—	104,811	—	—	—

Chelsea.

The registration district of Chelsea, with an area of 703 acres (exclusive of water), was divided in 1841 into the three sub-districts of Chelsea, south, east, and west.

The population in 1801 was 11,604, or 14·63 people per acre. It increased very rapidly during the first two decades of the present century, more than doubling itself in that period. From 1821 to 1841 its progress was less rapid, the population in the latter year being 40,179, or 51 people per acre. In the next decade 1851 there was again a very large increase of 41 per cent. From that time down to 1871 the population continued to increase very slowly. During the last ten years however there has again been a very marked increase (over 53 per cent.) in the population of the north-east sub-district,* the effect of this being to raise the total decennial increase throughout the entire district about 24 per cent.

Decade.	Acreage.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	793	11,604	—	—	—	14·63	—
'11	,,	18,262	57·38	7,658	—	23·03	—
'21	,,	26,860	47·08	8,598	—	33·87	—
'31	,,	32,371	20·52	5,511	—	40·82	—
'41	,,	40,179	24·12	7,808	7·12	50·67	7·11
'51	,,	56,538	40·71	16,359	9·57	71·30	7·45
'61	,,	63,439	12·21	6,901	10·48	80·00	7·63
'71	,,	71,089	12·06	7,650	11·33	89·65	7·91
'81	,,	88,128	23·97	17,039	13·99	111·13	7·95
Total increase....	—	—	—	77,524	—	—	—

* See Table B, Appendix.

St. George's, Hanover Square.

The present district of St. George's, Hanover Square, consists of the sub-districts of Hanover Square, Mayfair, and Belgrave, together with St. John's and St. Margaret's, Westminster, which previous to 1871 formed part of the former district of Westminster. The total area is 1,895 acres, and it should be noticed that the area given in the census returns of 1851 and 1861 is nearly 100 acres larger than in the last census returns. The total population of the district in 1801 was 64,323, or just 34 people per acre. The largest increase in any one decade (24·88 per cent.) occurred between 1821 and 1831, chiefly in the sub-districts of Hanover Square, Mayfair, Belgrave, and St. John's, Westminster, when 21,000* were added to its population. From that time the rate of increase rapidly diminished, and the population which just doubled itself in the first forty years of the century, continued slowly to increase to 155,984, or 82 people per acre, in 1861, since which period there has been a continued decrease, the population in that time having been reduced to 79 people per acre.

Decade.	Acres, ex-Water.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	1,895	64,323	—	—	—	33·94	—
'11	,,	71,504	11·16	7,181	—	37·73	—
'21	,,	85,787	19·97	14,283	—	45·27	—
'31	,,	106,386	24·85	20,599	—	56·14	—
'41	,,	123,264	15·86	16,878	7·42	65·04	8·29
'51	,,	138,839	12·64	15,575	8·13	73·27	9·02
'61	,,	155,984	12·34	17,145	9·09	82·31	9·05
			Decrease.	Decrease.			
'71	,,	155,936	− 0·03	− 48	9·01	82·29	9·13
				Decrease.			
'81	,,	149,748	− 3·97	−6,188	9·40	79·02	8·41
Total increase	—	—	—	85,425	—	—	—

The decrease in population is most conspicuous in the case of the Hanover Square sub-district, where it has continuously fallen from 21,398 in 1841 to 16,862 in 1881. In Mayfair there was a decrease from 15,048 in 1841 to 13,107 persons in 1871, but the last decade shows a slight increase. In St. John's, Westminster, the population continued to increase until 1871; during the last decade however there has been a very decided decrease. In St. Margaret's, Westminster, the population continued to increase up to 1851, but since then there has been a continuous decrease of nearly 6,000 persons, and the population has been reduced from 53 to 42 people per acre.†

* See Table B, Appendix. † See Table C, Appendix.

The only one of the sub-districts which since 1841 has shown a continued increase is Belgrave, where up to 1861 it was very rapid; latterly the increase has very greatly diminished, as the following figures show:—

Belgrave (Sub-District).

Decade.	Acres, ex-Water.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1841	543	30,106	—	—	6·97	55·44	7·96
'51	,,	40,034	32·98	9,928	9·20	73·73	8·01
'61	,,	55,113	37·67	15,079	12·18	101·50	8·33
'71	,,	57,972	5·19	2,859	12·72	106·76	8·39
'81	,,	59,220	2·15	1,248	14·80	109·06	7·37
Total increase....	—	—	—	29,114	—	—	—

The great reduction in the number of people per house in this fashionable district during the last ten years is especially noticeable.

Westminster.

The limits of the registration district of Westminster were greatly altered in 1871. In the first place the sub-districts of St. John's and St. Margaret's were, as already stated, taken away from it to form part of the St. George's, Hanover Square, district, while by way of compensation the sub-district of St. Anne, Soho, which previously formed part of the Strand district, was added to it; the sub-districts now are Golden Square, Berwick Street, St. James's Square, and St. Anne's, Soho. Its entire area is only 216 acres, and the population in 1801 was 46,099, or 213 people per acre, almost exactly what it has since become reduced to in 1881. The population of the entire district continued slowly to increase until 1841, when it attained its maximum of 249 people per acre; since then it has continued slowly to decrease.

Decade.	Acres, ex-Water.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	216	46,099	—	—	—	213·42	—
'11	,,	46,381	0·61	282	—	214·73	—
'21	,,	49,034	5·72	2,653	—	227·01	—
'31	,,	52,653	7·38	3,619	—	243·76	—
'41	,,	53,878	2·33 Decrease.	1,225 Decrease.	23·12	249·44	10·79
'51	,,	53,741	− 1·26	− 137	22·00	248·80	11·31
'61	,,	52,752	− 1·84	− 989	21·77	244·22	11·22
'71	,,	51,181	− 2·98	−1,571	21·08	236·95	11·24
'81	,,	46,549	− 9·05	−4,632	19·84	215·51	10·86
Total increase....	—	—	—	450	—	—	—

The population of the sub-districts of Berwick Street and St. Anne's, Soho, is the densest in the metropolis, and in the case of Berwick Street appears to have attained its maximum of 450 people per acre in 1851, the highest number ever yet attained in any sub-district in the metropolis during the present century. In 1871 the density of the population had declined to 429 people per acre.

Berwick Street (Sub-District).

Decade.	Acres, ex-Water.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1841	24	10,449	—	—	33·42	435·37	13·03
'51	,,	10,798	3·34	349	32·46	449·91	13·86
			Decrease.	Decrease.			
'61	,,	10,607	− 1·77	− 191	32·00	441·96	13·81
'71	,,	10,287	− 3·02	− 320	30·08	428·63	14·25
Decrease	—	—	—	− 162	—	—	—

From 1851 down to the period of the last census there has been a constant decrease in the population of the Berwick Street sub-district, and the number of houses per acre; the number of people in each house has largely increased, until it has now the largest number in any district in London, viz., 14·25 persons per house, or nearly twice the average of the metropolis in 1881. The number of houses has decreased from 33·42 per acre in 1831 to 30·08 in 1871; this district still has the largest number of houses per acre in the metropolis.

St. Anne's, Soho, Sub-District.

Next to Berwick Street, this sub-district has the questionable distinction of being the most densely populated in the whole of the metropolis. So far back as 1801 it had a population of over 215 people per acre; it continued to increase in density until 1871, when it attained its maximum of 325 people per acre, the number of people per house in 1881 (13) being also exceptionally high.

St. Anne's, Soho (Sub-District).

Decade.	Acres, ex-Water.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	54	11,637	—	—	—	—	—
'11	,,	12,288	5·59	651	—	215·50	—
'21	,,	15,215	23·82	2,927	—	227·56	—
'31	,,	15,600	2·53	385	—	281·76	—
'41	,,	16,480	5·64	880	26·00	305·18	11·74
'51	,,	17,335	5·19	855	25·07	321·02	12·80
'61	,,	17,426	0·52	91	25·37	322·70	12·72
'71	,,,	17,562	0·78	136	24·76	325·22	13·14
			Decrease.	Decrease.			
'81	,,	16,608	− 5·43	− 954	23·39	307·55	13·15
Total increase	—	—	—	4,971	—	—	—

Marylebone.

The district of Marylebone, which was first included in the metropolitan registration districts in 1801, has an area of 1,499 acres. It was divided into six sub-districts in 1841, viz., All Souls, Cavendish Square, Rectory, St. Mary's, Christchurch, and St. John's, the area of the two latter (1,051 acres) alone representing more than two-thirds of the entire district.

The population more than doubled itself in the first forty years of this century, the largest increase occurring between 1811 and 1831; the increase in the one decade being 20,415, and in the other 26,166. The population continued to increase slowly until 1861, since which time there has been in nearly all the sub-districts a continuous decrease, the single exception being St. John's where there has been a continuous increase; the rate of increase however during the last ten years was only 1·50 per cent.*

Decade.	Acres, ex-Water.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	1,499	63,982	—	—	42·68	42·68	—
'11	,,	75,624	18·30	11,642	—	50·45	—
'21	,,	96,040	27·00	20,416	—	64·07	—
'31	,,	122,206	27·24	26,166	—	81·53	—
'41	,,	138,164	13·05	15,958	9·45	92·17	9·75
'51	,,	157,696	14·42	19,532	10·56	105·20	9·96
'61	,,	161,680	2·52 Decrease.	3,984 Decrease.	10·91	107·86	9·88
'71	,,	159,254	− 1·50	−2,426	10·90	106·24	9·75
'81	,,	154,910	− 2·73	−4,344	10·70	103·34	9·66
Total increase....	—	—	—	90,928	—	—	—

Hampstead.

The district of Hampstead comprises an area of 2,248 acres, and the entire population at the beginning of the century only amounted to 4,343, or to just 2 persons per acre. It doubled itself in the course of the next twenty years, but from that time down to 1851 the rate of increase was comparatively small.

The increased traffic facilities afforded by the construction of railways however, communicating with the metropolitan suburbs, notably in the case of the North London and Metropolitan and Midland Railways, have since then very largely contributed to the rapid increase in this important suburb.

In 1851 the population of Hampstead was 11,986, or 5 people per acre; it has since continued to increase at a very rapid rate, and at the date of the last census it had reached 45,452, or 20 persons per acre, the increase during the last two decades alone

* See Table B, Appendix.

amounting to 26,346; and there is everything to indicate a continuation of a rapid growth for some time to come.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801.....	2,248	4,343	—	—	—	1·93	—
'11.....	,,	5,843	34·54	1,500	—	2·60	—
'21.....	,,	7,263	24·30	1,420	—	3·23	—
'31.....	,,	8,588	18·24	1,325	—	3·82	—
'41.....	,,	10,093	17·52	1,505	0·63	4·49	7·15
'51.....	,,	11,986	18·75	1,893	0·76	5·33	6·97
'61.....	,,	19,106	59·40	7,120	1·18	8·50	7·20
'71.....	,,	32,281	68·96	13,175	1·93	14·36	7·42
'81.....	,,	45,452	40·80	13,171	2·61	20·22	7·74
Total increase	—	—	—	41,109	—	—	—

Pancras.

The district of St. Pancras is divided into six sub-districts, viz., Regent's Park, Tottenham Court, Gray's Inn Lane, Somers Town, Camden Town, and Kentish Town; the total area is 2,653 acres, and in 1801, when it was first included within the metropolitan registration area, the population was only 31,779, or 12 persons per acre—considerably less than that of Hampstead in 1871. The population in the course of the last eighty years has continuously increased to 236,258, or to 89 people per acre.

The population of the six sub-districts is not given separately in the census returns prior to 1841; by that time the population of the entire district had increased to 129,763, or to 49 people per acre, being a fourfold increase in the course of forty years. Between 1821 and 1831 there was a very large and noticeable increase of 31,710 persons, or over 44 per cent. per decade. Another and still more remarkable increase of 37,193 inhabitants occurred between 1841 and 1851, this large increase being chiefly in the outlying sub-districts of Regent's Park, Somers Town, Camden Town, and more especially in Kentish Town, where the population more than doubled itself in ten years.

From 1851 down to the present time the population of the district has continued to increase, but at a very diminished rate, the total increase in the last decade being only 14,793. It is worthy of notice that the last increase is almost exactly the same as that which occurred during the first decade of the century, the amount however in the one case representing as much as 45·80 per cent. increase on the smaller, but only 6·68 per cent. on the larger figure.

Although the aggregate population of this district has continued

to increase, it is noticeable * that already in the sub-district of Tottenham Court, where in 1871 the population had reached 204 people per acre, there has been a decrease during the last decade; and further that a decrease has occurred during the two last decades, and to a much larger extent, in two other sub-districts, viz., Somers Town and Camden Town; the population per acre having in the one case decreased from 214 to 188 people per acre, and in the other from 141 to 105 people per acre. The cause of this decrease however is in both cases mainly attributable to the absorption by the Midland Railway Company of very large areas in these sub-districts for the construction of their stations, sidings, and other works.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801.....	2,653	31,799	—	—	—	11·98	—
'11.....	„	46,333	45·80	14,554	—	17·47	—
'21.....	„	71,838	55·05	25,505	—	27·08	—
'31.....	„	103,548	44·14	31,710	—	39·03	—
'41.....	„	129,763	25·31	26,215	5·57	48·91	8·79
'51.....	„	166,956	28·67	37,193	7·00	62·93	8·98
'61.....	„	198,788	19·06	31,832	8·24	74·93	9·10
'71.....	„	221,465	11·41	22,677	9·09	83·48	9·19
'81.....	„	236,258	6·68	14,793	9·31	89·05	9·56
Total increase	—	—	—	204,479	—	—	—

Islington.

The district of Islington has an area of 3,092 acres. It was divided into two sub-districts (the eastern and western) in 1841. The population in 1801 was only 10,212, or 3 people per acre, as compared with a population of 282,865, or 91 people per acre, in 1881. The growth of the population of this district has been very remarkable; during the first two decades of this century it just doubled itself, and the increase during the next two decades (1821 and 1841) was still more rapid, the population in the latter decade having increased to 55,690, or to 18 people per acre. From that time down to the period of the last census the increase has been equally rapid; the full proportions of this growth of the Islington district will perhaps be better realised by a reference to the diagram.†

Having regard to the fact that the population has now reached 91 people per acre, and to the decrease which has occurred in some other residential districts where the population has attained the same amount of density, it would appear probable that the same

* See Table D, Appendix.
† See Diagram No. 9.

rapid increase which has hitherto occurred will not continue for the future.

Decades.	Acreage, ex-Water.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	3,092	10,212	—	—	—	3·30	—
'11	,,	15,065	47·52	4,853	—	4·87	—
'21	,,	22,417	48·80	7,352	—	7·25	—
'31	,,	37,316	66·46	14,899	—	12·07	—
'41	,,	55,690	49·24	18,374	2·75	18·01	6·55
'51	,,	95,329	71·18	39,639	4·38	30·83	7·05
'61	,,	155,341	62·95	60,012	6·70	50·24	7·50
'71	,,	213,778	37·62	58,437	8·76	69·14	7·89
'81	,,	282,865	32·32	69,087	11·01	91·49	8·31
Total increase	—	—	—	272,653	—	—	—

It should be remarked that the great increase in the population of Islington during the last decade, viz., 69,087, is the largest which has ever occurred in any registration district in the metropolis during the present century, if considered in relation to its area.*

Hackney.

The Hackney district comprises the five sub-districts of Stoke Newington, Stamford Hill, West Hackney, Hackney, and South Hackney. Except in the case of Stoke Newington, the population is not given separately in the census returns prior to 1841. It has an area of 3,834 acres, and the population in 1801 was 14,192, or only 3·70 people per acre. From that time down to the period of the last census the growth of the population in this district has been rapid and continuous, the increase during the last decade was 61,511. The principal increase occurred in Stoke Newington sub-district, where the population considerably more than doubled itself, and in Hackney, where there was an addition of over 26,000 inhabitants.†

Decades.	Acreage.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	3,834	14,192	—	—	—	3·70	—
'11	,,	18,920	33·32	4,728	—	4·93	—
'21	,,	25,164	33·00	6,244	—	6·56	—
'31	,,	34,527	37·21	9,363	—	9·01	—
'41	,,	42,261	22·40	7,734	1·88	11·02	5·88
'51	,,	58,429	38·26	16,168	2·56	15·24	5·95
'61	,,	83,295	42·56	24,866	3·49	21·73	6·22
'71	,,	124,951	50·01	41,656	5·05	32·59	6·46
'81	,,	186,462	49·23	61,511	7·17	48·63	6·79
Total increase	—	—	—	172,270	—	—	—

* The increase per acre in the *sub-districts* of Bromley and Battersea was larger. See pp. 370 and 375.

† See Table C, Appendix.

St. Giles.

The District of St. Giles is divided into three sub-districts of St. George, Bloomsbury, and St. Giles, north, and south. It has an area of 245 acres, and the population so far back as 1801 was 36,502, or 198 persons per acre. The increase during the first decade was considerable (33 per cent.), but from that time until 1841 it was very small, and after attaining a maximum density of 222 people per acre in that year, it has continuously decreased to 185 persons per acre in 1881. In the St. Giles sub-district the greatest density, viz., 303 people per acre, was reached in 1841, but since then it has rapidly decreased to 233 at the date of the last census in 1881.

Decades.	Acreage.	Population.	Rate of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	245	36,502	—	—	—	148·99	—
'11	„	48,536	32·97	12,034	—	198·11	—
'21	„	51,793	6·71	3,257	—	211·40	—
'31	„	52,907	2·15	1,114	—	215·95	—
'41	„	54,292	2·62	1,385	20·24	221·60	10·95
				Decrease.			
'51	„	54,214	− 0·14	− 78	19·18	221·28	11·54
'61	„	54,076	− 0·26	− 138	19·14	220·72	11·53
'71	„	53,556	− 0·96	− 520	18·64	218·60	11·73
'81	„	45,382	− 15·26	− 8,174	16·17	185·23	11·45
Total increase	—	—	—	8,880	—	—	—

The Strand.

The Strand district as reconstituted consists of three sub-districts. The first, St. Martin-in-the-Fields, was previous to 1871 an independent registration district having two sub-districts, viz., Charing Cross and Long Acre; and the writer of this paper regrets to find that the population is no longer given separately in the census returns; he is consequently unable to ascertain what changes have occurred in this densely populated locality during the last ten years. The other two sub-districts are St. Mary-le-Strand, and St. Clement Danes. At the same time that St. Martin-in-the-Fields was added to the Strand district, the St. Anne's, Soho, sub-district was, as already explained, transferred to the Westminster district.

The area of the Strand district is 403 acres, and the population which in 1801 was 50,854, or 126 persons per acre, increased very slightly until 1821, when it attained its maximum of 137 people per acre. In the next decade it suddenly decreased to 125, but recovered during the succeeding decade to 129 people per acre, from which time down to 1881 there has been a constant decrease, the

population in that year having become reduced to 33,582, or to 83 persons per acre. In the sub-districts of St. Mary-le-Strand and St. Clement Danes the population slowly increased up to 1851, when it had a density of 232 persons per acre. From that time the population has very rapidly declined, until at the last census in 1881 it amounted to only 137 persons per acre.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	403	50,854	—	—	—	126·19	—
'11	,,	51,334	0·94	480	—	127·38	—
'21	,,	55,152	7·44	3,818	—	136·85	—
			Decrease.	Decrease.			
'31	,,	50,385	− 8·64	4,767	—	125·03	—
				Increase.			
'41	,,	52,209	3·62	1,824	13·30	129·55	9·74
			Decrease.	Decrease.			
'51	,,	51,765	− 0·85	− 444	12·20	128·45	10·53
'61	,,	48,242	− 6·81	− 3,523	11·53	119·71	10·39
'71	,,	41,339	− 14·31	− 6,903	9·97	102·58	10·29
'81	,,	33,582	− 18·76	− 7,757	8·17	83·33	10·20
Decrease	—	—	—	17,272	—	—	—

Holborn.

The district of Holborn, as rearranged in 1871, contains eleven sub-districts, viz., St. George the Martyr, St. Andrew eastern, and Saffron Hill (which up to that time constituted the Holborn district), St. James's, Clerkenwell, Amwell, Pentonville, and Goswell Street (which similarly had constituted the old district of Clerkenwell), together with the sub-districts of Old Street, City Road, Whitecross Street, and Finsbury, which previously formed part of the old district of St. Luke's.

The changes which have occurred in the population of these numerous sub-districts have been very various, but in nearly all cases there has been a decrease during the last two decades. Taking the entire district, with its area of 812 acres, the population in 1801 amounted to 84,895, or to 104 persons per acre; it continued to increase somewhat rapidly until 1831, but from that time until 1861 at a very much diminished rate, the population barely doubling itself in the period of sixty years. In 1861 it attained its maximum density of 206 persons per acre, but during the last two decades there has been a continuous decrease, the population having in that time declined from 167,616 to 151,835, or to 187 persons per acre. The greatest density of population attained in any portion of this district was in the sub-district of Whitecross Street, where in 1861 the population was 448 per acre, or very nearly as high as in the case of Berwick Street. In

St. Andrew, eastern, the maximum density of 423 persons per acre was attained in 1851; since then however the density has been very greatly reduced.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	812	84,895	—	—	—	104·55	—
'11	„	99,574	17·29	14,679	—	122·63	—
'21	„	121,244	21·76	21,670	—	149·31	—
'31	„	136,972	12·97	15,728	—	168·68	—
'41	„	151,046	10·28	14,074	22·09	186·02	8·42
'51	„	165,454	9·53	14,408	22·02	203·76	9·25
'61	„	167,616	1·31 Decrease.	2,162 Decrease.	21·62	206·43	9·55
'71	„	163,491	− 2·46	− 4,125	20·26	201·34	9·94
'81	„	151,835	− 7·13	−11,656	18·65	187·00	10·03
Total increase	—	—	—	66,940	—	—	—

London City.

Comprised within the City of London registration district there are as many as 110 different parishes. Previous to 1871 there were five sub-districts, three of them (London city south-west, north-west, and south) being now united under the title of the Castle Baynard sub-district; the other two were Allhallows, Barking, and London city south-west, the latter now being designated the Broad Street sub-district. To these were added in 1871 the two sub-districts of St. Botolph and Cripplegate, which previously constituted the district of East London, together with the two sub-districts of West London North (now designated St. Sepulchre sub-district), and the West London South (now the St. Bride's sub-district), which formerly constituted the West London district.

The total area of the City of London district as now constituted is 668 acres, and the population included within that area in 1801 was 128,833, or 193 persons per acre. In the next decade there was a considerable decrease, but in the succeeding decade of 1821 a slight increase, which continued until 1851, when the population obtained the maximum of 129, 128, or 193 people per acre. From that time down to the period of the last census there has been a very large decrease, the population having diminished to 51,439 or to only 77 people per acre. The decrease in the case of Castle Baynard has been continuous from 1801, the population in that year was over 38,404 or 182 persons per acre, but has since dwindled down to less than 10,000 or to 47 people per acre in 1881.*

* See Table C, Appendix, and Diagram No. 14.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	668	128,833	—	—	—	192·86	—
			Decrease.	Decrease.			
'11	,,	121,124	−15·98	− 7,709	—	181·32	—
'21	,,	125,065	3·26	3,941	—	187·23	—
			Decrease.	Decrease.			
'31	,,	123,608	− 1·17	− 1,457	—	185·03	—
'41	,,	124,717	0·90	1,109	23·54	186·71	7·93
'51	,,	129,128	3·54	4,411	22·00	193·31	8·79
			Decrease.	Decrease.			
'61	,,	113,387	−12·19	−15,741	20·11	169·75	8·44
'71	,,	75,983	−32·99	−37,404	14·09	113·75	8·07
'81	,,	51,439	−32·30	−24,544	9·82	77·01	7·84
Total decrease	—	—	—	−77,394	—	—	—

Shoreditch.

In 1841 the district of Shoreditch was divided into six sub-districts: Holywell, St. Leonard's, Hoxton New Town, Hoxton Old Town, Haggerstone East, and Haggerstone West. In 1881, however, the two latter were for some reason again united. The area of the entire district is 634 acres, and the population, which in 1801 was 34,766, or just 55 people per acre, doubled itself in the course of the next thirty years, and continued to increase at much the same rate up to 1861, when it reached 129,394, or 202 people per acre; from that time it has slightly decreased.

In the sub-districts of Holywell and St. Leonards, where in 1861 the population was respectively 258 and 259 people per acre, it decreased in 1881, in the one case to 110, and in the other case to 202 people per acre. In the remaining sub-districts however there has been a continuous but very slight increase.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	634	34,766	—	—	—	54·84	—
'11	,,	43,930	26·36	9,164	—	69·29	—
'21	,,	52,966	20·57	9,036	—	83·54	—
'31	,,	68,564	29·45	15,598	—	105·15	—
'41	,,	83,432	21·68	14,868	19·94	131·60	6·60
'51	,,	109,257	30·96	25,825	24·19	172·33	7·12
'61	,,	129,364	18·40	20,107	26·93	204·04	7·58
			Decrease.	Decrease.			
'71	,,	127,164	− 1·70	− 2,200	24·56	200·57	8·17
'81	,,	126,591	− 0·45	− 573	23·91	199·67	8·35
Total increase	—	—	—	91,825	—	—	—

Bethnal Green.

This district has since 1841 been divided into the four sub-districts of Hackney Road, Green, Church, and Town. It has an area of 738 acres, and the population, which in 1801 was 22,300, or 32 people per acre, increased very rapidly during the next two decades, when it doubled itself. From that time down to 1881 it has continued, but at a very much diminished rate,* to increase, to 172 people per acre. In the sub-district of Hackney Road, where in 1871 there was a population of 213 people per acre, there has during the last decade been a slight decrease, while in the "Town" sub-district there was a much larger decrease, and the population has been reduced from 231 people per acre in 1861 to 208 in 1881.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	738	22,310	—	—	—	30·23	—
'11	„	33,619	50·69	11,309	—	45·55	—
'21	„	45,676	35·86	12,057	—	61·89	—
'31	„	62,018	35·78	16,342	—	84·03	—
'41	„	74,088	19·46	12,070	15·96	100·39	6·29
'51	„	90,193	21·74	16,105	18·02	122·21	6·78
'61	„	105,101	16·53	14,908	19·96	142·41	7·13
'71	„	120,104	14·27	15,003	21·54	162·74	7·55
'81	„	126,961	5·71	6,857	22·50	172·03	7·65
Total increase	—	—	—	104,651	—	—	—

Whitechapel.

This district was in 1841 divided into the seven sub-districts of Artillery, Spitalfields, Mile End New Town, Whitechapel North, Whitechapel Church, Goodman's Fields, and Aldgate. In 1881 these were reduced to six by the union of Artillery and Spitalfields.

The total area of the district is 373 acres, and the population in 1801 was 57,202, or about 154 people per acre. There have been considerable fluctuations in the population of this district. Until 1821 it continued slowly to increase; a considerable decrease occurred in the next ten years, followed in the succeeding two decades by a slight increase, the population per acre having in 1851 risen to 214 people per acre. Since that time there has been a continued decrease, until in 1881 it has become reduced to 192 people per acre. In Spitalfields in 1871 the population had reached 350 people per acre, and to 11 people per house; whether there has been an increase or diminution during the last decade it

* See Table D, Appendix.

is impossible to say, as the sub-district is now merged in that of Artillery, where the population is much less dense.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	372	57,202	—	—	—	153·77	—
'11	,,	62,672	9·56	5,470	—	168·47	—
'21	,,	68,932	9·99	6,260	—	185·30	—
			Decrease.	Decrease.			
'31	,,	64,141	− 6·95	− 4,791	—	172·42	—
'41	,,	71,765	11·89	7,624	23·75	192·92	8·12
'51	,,	79,759	11·14	7,994	23·69	214·41	9·05
			Decrease.	Decrease.			
'61	,,	78,970	− 0·99	− 789	23·29	212·29	9·11
'71	,,	76,573	− 3·03	− 2,397	22·24	205·84	9·26
'81	,,	71,363	− 6·80	− 5,210	20·24	191·84	9·48
Total increase	—	—	—	14,161	—	—	—

St. George in the East.

This district in 1841 was divided into the three sub-districts of St. Mary, St. Paul, and St. John. It has an area of 213 acres, and the population at the beginning of this century was 21,170, or just 99 people per acre. It increased rapidly during the three first decades, and at a much less rapid rate up to 1861, when it amounted to 48,891, or to 229 people per acre. From that time down to the period of the last census, it has continued to diminish, the population in 1881 having been reduced to 221 people per acre. The most densely populated sub-district is that of St. Mary's, where in 1861 it was as high as 293 people per acre. It had however become slightly reduced in 1881.*

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	213	21,170	—	—	—	99·39	—
'11	,,	26,917	27·15	5,747	—	126·37	—
'21	,,	32,528	20·85	5,611	—	152·71	—
'31	,,	38,505	18·38	5,977	—	180·18	—
'41	,,	41,350	7·39	2,845	28·10	194·13	6·91
'51	,,	48,376	16·99	7,026	28·85	227·12	7·87
'61	,,	48,891	1·06	515	28·96	229·54	7·93
			Decrease.	Decrease.			
'71	,,	48,052	− 1·72	− 839	27·85	225·60	8·10
'81	,,	47,157	− 1·86	− 895	27·14	221·40	8·16
Total increase	—	—	—	25,987	—	—	—

* See Table D, Appendix.

Stepney.

This district, which is divided into the three sub-districts of Shadwell, Ratcliffe, and Limehouse, has an area of 421 acres; and the population in 1801 was 25,061, or nearly 60 people per acre. Although as a whole the population has from that time continued slowly to increase, in several of the districts, and notably in Shadwell, there has since 1851 been a continued and rapid decrease, the population which in that year was 163 people per acre, having in 1881 been reduced to 105. In Ratcliffe likewise there has been a decrease, and the population which in 1861 was 156 people per acre, had become reduced in 1881 to 149. There was a very rapid increase in the Limehouse sub-district up to 1841; since that time it has continued to increase uninterruptedly, but at a very much diminished rate,* up to the period of the last census in 1881.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	421	25,061	—	—	—	59·53	—
'11	„	27,552	9·94	2,491	—	65·44	—
'21	„	29,413	6·76	1,861	—	69·87	—
'31	„	38,544	31·04	9,131	—	91·55	—
'41	„	45,379	17·73	6,835	15·82	107·79	6·81
'51	„	54,173	19·38	8,794	17·56	128·68	7·33
'61	„	56,572	4·43	2,399	17·67	134·38	7·60
'71	„	57,690	1·98	1,118	18·57	137·03	7·38
'81	„	58,543	1·48	853	19·01	139·06	7·31
Total increase	—	—	—	33,482	—	—	—

Mile End, Old Town.

This district which in 1881 was divided into the two sub-districts of Mile End Old Town, West and East, has an area of 673 acres. The population in 1801 was 9,848, or about 15 people per acre; it continued rapidly to increase to 45,308, and to 67 people per acre in 1841, a more than fourfold increase in a period of forty years. During the next three decades it continued to increase, but at a less rapid rate, doubling itself in those thirty years. The reduced rate of increase during the last decade is mainly attributable to the decrease which has occurred in the population of the Western sub-district, where the density of the population attained its maximum of 202 people per acre in 1871. The Eastern sub-district, which had in 1871 a density of only 140 people per acre, has continued to increase very rapidly.†

* See Table B, Appendix.
† See Table D, Appendix.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	693	9,848	—	—	—	14·63	—
'11	,,	14,465	46·88	4,617	—	21·49	—
'21	,,	22,876	58·15	8,411	—	33·99	—
'31	,,	30,898	48·18	11,022	—	50·37	—
'41	,,	45,308	33·66	11,410	11·45	67·32	5·88
'51	,,	56,602	24·93	11,294	13·18	84·10	6·38
'61	,,	73,064	29·08	16,462	15·98	108·57	6·79
'71	,,	93,152	27·49	20,088	19·37	138·41	7·15
'81	,,	105,613	13·37	12,461	20·86	156·92	7·52
Total increase	—	—	—	95,765	—	—	—

Poplar District.

This district from 1801 until 1871 was divided into the two sub-districts of Bow and Poplar; in that year however Bow was divided into the two sub-districts of Bow and Bromley.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	2,117	8,278	—	—	—	3·91	—
'11	,,	13,548	63·66	5,270	—	6·40	—
'21	,,	18,932	39·74	5,384	—	8·94	—
'31	,,	25,066	32·40	6,134	—	11·84	—
'41	,,	31,122	24·12	6,056	2·39	14·70	6·14
'51	,,	47,162	51·59	16,040	3·23	22·28	6·90
'61	,,	79,196	67·92	32,034	5·25	37·41	7·12
'71	,,	116,376	46·95	37,180	7·68	54·97	7·15
'81	,,	156,510	34·48	40,134	9·67	73·93	7·64
Total increase	—	—	—	148,232	—	—	—

The district of Poplar has a large area of 2,117 acres, and its population in 1801 was only 8,278, or about 4 people per acre. In the two next decades it more than doubled itself. The increase during the last four decades has been very rapid. The population having increased from 31,122 in 1831 to 156,510, or to 74 people per acre, at the date of the last census in 1881.

In the sub-districts of Bow and Bromley the increase during the same period has been quite exceptional, nearly trebling itself between 1841 and 1861, and again nearly doubling in the succeeding decade, the increase amounting to 29 people per acre in 1871, and to over 30 people per acre in 1881. In Bromley, which was detached from Bow in 1871, the increase has during the last ten years amounted to as much as $38\frac{1}{2}$ people per acre, without exception the largest which has ever occurred in any sub-district in London during this century.*

* See Table, pp. 375 and 376.

Sub-Districts of Bow and Bromley.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	1,113	3,785	—	—	—	3·40	—
'11	„	5,840	54·24	2,055	—	5·25	—
'21	„	6,709	14·88	869	—	6·03	—
'31	„	8,217	22·48	1,508	—	7·38	—
'41	„	10,780	31·19	2,563	1·73	9·69	5·58
'51	„	18,778	74·21	7,998	2·62	16·87	6·43
'61	„	35,667	89·92	16,889	4·72	32·05	6·79
'71	„	67,765	89·99	32,098	8·64	60·88	7·05
'81	„	101,433	49·68	33,668	11·90	91·13	7·66
Total increase	—	—	—	97,648	—	—	—

The population of Poplar sub-district although it continued to increase very rapidly up to 1861, has since increased much more slowly. The number of people in 1881 only amounted to about 55 per acre.*

St. Saviour's, Southwark.

This district, which in 1801 consisted of only the two sub-districts of Christchurch and St. Saviour, with an area of 204 acres, was in 1871 very largely increased by the absorption into it of the old districts of St. George's, Southwark (284 acres), and that of Newington (631 acres). There are now altogether eight sub-districts, viz., Christchurch, St. Saviour's, Kent Road, Borough Road, London Road, Trinity, Newington, St. Peter's, Walworth, and St. Mary's, Newington. The total area of the district is 1,119 acres, and the population in 1801 was 78,219, (56 people per acre). It nearly doubled itself during the first three decades of this century, but from that time down to 1871 the increase has been relatively very small: scarcely any increase at all in fact occurring between 1861 and 1871. During the last decade there has been an increase of 11·49 per cent., chiefly in the sub-districts of St. Peter's, Walworth, and St. Mary's districts; a considerable decrease however occurred during that and some of the preceding decades in many of the other sub-districts. The population in 1881 averaged 174 people per acre throughout the entire district; the most thickly populated portion being the Borough Road sub-district, where in 1871 the density was as high as 261 people per acre; it however decreased in 1881 to 249 people per acre.

* See Table D, p. 427.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	1,119	62,669	—	—	—	56·00	—
'11	„	78,219	24·81	15,550	—	69·90	—
'21	„	99,562	27·29	21,343	—	88·97	—
'31	„	116,006	16·52	16,444	—	103·67	—
'41	„	134,225	15·70	18,219	18·49	119·96	6·49
'51	„	152,371	13·51	18,146	19·71	136·17	6·91
'61	„	173,900	14·13	21,529	21·85	155·41	7·11
'71	„	175,049	0·66	1,149	20·83	156·43	7·51
'81	„	195,164	11·49	20,115	21·63	174·41	8·06
	—	—	—	132,495	—	—	—

St. Olave, Southwark.

Prior to 1871 the district of St. Olave, Southwark, comprised only the two sub-districts of St. Olave and St. John Horsleydown; to these were then added the sub-districts of Leather Market, St. Mary Magdalen, and St. James, Bermondsey; at the same time the former district of Rotherhithe became another of its sub-districts. The total area of the district is 1,331 acres, and the population in 1801 amounted to 46,281, or to about 34 people per acre.

The increase of the population during the first forty years was very slight, but from that time down to 1871 there was a very considerable increase, the population nearly doubling itself in that period; during the last decade, although there had been a large increase in Rotherhithe and St. James's, Bermondsey, the decrease which occurred in four of the other sub-districts has considerably reduced the increase of the entire district. The population in St. Olave sub-district after remaining almost stationary until 1831, when it attained its maximum of 183 people per acre, rapidly and continuously declined to 54 persons per acre in 1881. In Horsleydown the maximum density of 165 people per acre was attained in 1861; since then it has rapidly decreased to 129 in 1881. In Leather Market there was a maximum density of 180 persons per acre in 1871, which declined to 175 at the period of the last census; while in St. Mary's there has been a decline from 116 people per acre in 1861, to 110 in 1881. In the sub-district of Rotherhithe the population in 1881 only amounted to 62 people per acre, and both here and in St. James's, where the population was 138 people per acre,* there has been an uninterrupted increase since 1801, as much as 91 per cent. increase having occurred in the case of St. James's between 1861 and 1871.†

* See Table C, Appendix, p. 403. † See Table B, Appendix.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	1,331	46,281	—	—	—	34·77	—
'11	„	49,397	6·73	3,116	—	37·11	—
'21	„	57,148	15·69	7,751	—	42·94	—
'31	„	62,637	9·60	5,489	—	47·06	—
'41	„	68,701	9·68	6,064	7·98	51·62	6·47
'51	„	85,308	24·17	16,607	9·14	64·09	7·02
'61	„	101,913	19·46	16,605	10·48	76·57	7·31
'71	„	122,398	20·10	20,485	12·27	91·96	7·50
'81	„	134,632	9·99	12,234	13·11	101·15	7·71
Total increase	—	—	—	88,351	—	—	—

Lambeth.

The district of Lambeth was in 1841 divided into eight sub-districts.* Its total area is 3,942 acres. The population in 1801 was 27,985, or 7 people per acre; it increased very rapidly during the next twenty years, and doubled itself in that period, and again nearly doubled in the succeeding twenty years (1821 to 1841). From 1841 down to the period of the last census the population has increased very unequally in the different sub-districts. In some of them there has been a decrease, as for instance in Waterloo Road and Lambeth. The increase however in the case of Brixton and Norwood since 1841 has been very remarkable: the population of Brixton, which with its large area of 1,430 acres, at that time contained only 7 people per acre, increased to 41 people per acre in 1881, the addition to the population during the last ten years having been over 27,000.

In the case of Norwood, with a large area of 1,009 acres, the increase has been more rapid, the total population having increased from 2,961, or 3 people per acre, in 1841, to 19,017, or 19 people per acre, in 1881. The maximum density of 228 people per acre was reached in the Waterloo Road sub-district in 1861; it declined to 210 in the following decade, and increased again in 1881 to 227 per acre; the average density throughout the entire district in that year was however only 64 people per acre.

* 1. Waterloo Road, first; 2. Waterloo Road, second; 3. Lambeth Church, first; 4. Lambeth Church, second; 5. Kennington, first; 6. Kennington, second; 7. Brixton; 8. Norwood.

Lambeth District.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	3,942	27,985	—	—	—	7·10	—
'11	,,	41,614	48·81	13,659	—	10·56	—
'21	,,	57,638	38·41	15,994	—	14·62	—
'31	,,	87,856	52·43	30,218	—	22·29	—
'41	,,	115,888	31·91	28,032	4·51	29·40	6·51
'51	,,	139,325	20·23	23,437	5·19	35·35	6·81
'61	,,	162,044	16·30	22,719	5·81	41·11	7·07
'71	,,	208,342	28·57	46,298	7·39	52·85	7·15
'81	,,	253,699	21·77	45,357	8·98	64·36	7·17
Total increase	—	—	—	225,714	—	—	—

Wandsworth.

This suburban district, which comprises the five sub-districts of Clapham, Battersea, Wandsworth, Putney, and Streatham, has an area of 11,392 acres, and is the largest of all the metropolitan registration districts. The population in 1801 only amounted to 17,648, or to about 1½ persons per acre, and the growth of the population, more especially in some of the sub-districts, has been very remarkable. It will not fail to be noticed that up to 1851 the increase in the population of this important suburb was comparatively small, and that the period of greatest increase is coincident with that of the greatest decrease in the city and adjoining central districts. Of the extraordinarily large number of over 85,000 inhabitants added to this district during the last decade, over 53,000 are attributable to the Battersea sub-district: the total increase throughout the entire district being only 7·49 people per acre.*

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	11,392	17,648	—	—	—	1·55	—
'11	,,	22,372	26·77	4,724	—	1·96	—
'21	,,	27,490	22·88	5,118	—	2·41	—
'31	,,	33,090	20·37	5,600	—	2·90	—
'41	,,	39,855	20·45	6,765	0·57	3·50	6·17
'51	,,	50,764	27·37	10,909	0·73	4·46	6·13
'61	,,	70,403	38·69	19,639	0·98	6·18	6·29
'71	,,	125,060	77·64	54,657	1·68	10·98	6·53
'81	,,	210,434	68·26	85,374	2·70	18·47	6·84
Total increase	—	—	—	192,786	—	—	—

* See Table, p. 376.

Battersea (Sub-district).

The rapid growth of this sub-district is so remarkable as to deserve special notice. It has an area of 2,170 acres, and the population in 1801 was only 3,365, or only 1½ people per acre, exactly the same as that of the entire district at that particular period.

In 1851 the population had increased to 10,560, or to 5 people per acre, and during the next ten years just doubled itself.

It was however during the following twenty years, 1861 to 1881, that a sudden and quite unexampled growth of population occurred. During the first ten years it increased to 54,016, an increase of over 175 per cent., and it again doubled in the next ten years.

Decades.	Acreage, ex. Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	2,170	3,365	—	—	—	1·55	—
'11	,,	4,409	31·03	1,044	—	2·03	—
'21	,,	4,764	8·05	355	—	2·20	—
'31	,,	5,311	11·48	547	—	2·45	—
'41	,,	6,617	24·59	1,306	0·50	3·05	6·07
'51	,,	10,560	59·59	3,943	0·81	4·87	6·00
'61	,,	19,600	85·61	9,040	1·44	9·03	6·27
'71	,,	54,016	175·59	34,416	3·65	24·88	6·83
'81	,,	107,262	98·57	53,246	6·73	49·43	7·34
Total increase	—	—	—	103,897	—	—	—

Although the *rate* of increase during the last decade (98·57 per cent.) was much less than during the preceding one, the absolute amount of increase has been more than one-and-a-half times as great, the largest decennial increase which has ever occurred in any sub-district in the metropolis. The following comparison will show that when measured by the amount of increase of population per acre it is also, with the exception of Bromley, the largest that has ever occurred in the metropolis during the present century. Amongst the most noticeable of the other sub-districts is Streatham, where the growth of the population has been exceptionally rapid.

	Kensington.	Chelsea.	Islington.	Islington.	Hackney.
	1861 and 1871.	1841 and 1851.	1861 and 1871.	1871 and 1881.	1871 and 1881.
	Population.	Population.	Population.	Population.	Population.
	217,112	56,538	213,778	282,865	186,462
	145,892	40,179	155,341	213,778	124,951
Increase	71,220	16,359	58,437	69,087	61,511
	Per acre.	Per acre.	Per acre.	Per acre.	Per acre.
	63·52	71·30	69·14	91·49	48·63
	42·68	50·67	50·24	69·14	32·59
Increase	20·84	20·63	18·90	22·35	16·04

	Poplar.	Bromley Sub-District.	Wandsworth.	Battersea Sub-District.	Camberwell.
	1871 and 1881.	1871 and 1881.	1871 and 1881.	1871 and 1881.	1871 and 1881.
	Population.	Population.	Population.	Population.	Population.
	156,510	64,359	210,434	107,262	186,593
	116,376	41,710	125,060	54,016	111,306
Increase	40,134	22,649	85,374	53,246	75,287
	Per acre.	Per acre.	Per acre.	Per acre.	Per acre.
	73·93	109·64	18·47	49·43	41·93
	54·97	71·06	10·98	24·89	25·01
Increase	18·96	38·58	7·49	24·54	16·92

Camberwell.

This district was divided in 1841 into the four sub-districts of Dulwich, Camberwell, Peckham, and St. George. It has an area of 4,450 acres, and the population in 1801 was 7,059, or only 1½ people per acre. The increase in the then undivided district was up to 1841 very rapid, the population in that period having increased more than five-fold. From that time down to 1881 the increase of the population has been equally great; that which occurred between 1871 and 1881 being in fact, next to Wandsworth, the largest, but not (as has already been shown) *the largest per acre*, which has occurred in any district during the present century The principal increase has been in the Camberwell, Peckham, and St. George sub-districts. The population is much the densest in the St. George sub-district, where in 1881 it had reached 114 people to the acre; the most thinly populated is Dulwich, where at the time of the last census it was only a little over 4 people per acre.

Camberwell.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801.....	4,450	7,059	—	—	—	1·59	—
'11.....	,,	11,309	60·21	4,250	—	2·54	—
'21.....	,,	17,876	58·07	6,567	—	4·02	—
'31.....	,,	28,231	57·93	10,355	—	6·34	—
'41.....	,,	39,868	41·22	11,637	1·54	8·96	5·83
'51.....	,,	54,667	37·12	14,799	2·12	12·28	5·81
'61.....	,,	71,488	30·77	16,821	2·72	16·06	5·91
'71.....	,,	111,306	55·70	39,818	3·99	25·01	6·26
'81.....	,,	186,593	67·63	75,287	6·14	41·93	6·83
Total increase	—	—	—	179,534	—	—	—

Greenwich.

The district of Greenwich, which was only included in the metropolitan registration area in 1841, and from which the two sub-districts of Woolwich Arsenal and Woolwich Dockyard were taken in 1871 to form a portion of the new Woolwich district, has now only the four sub-districts of "St. Paul, Deptford," "St. "Nicholas, Deptford," "Greenwich West," and "Greenwich East." It has an area of 3,417 acres, and the population in 1801 was 32,621, or nearly 10 people per acre. It increased very slowly until 1841, but from that time, which was about the date of the completion of the London and Greenwich Railway, the population has continued very rapidly to increase; the population, which just doubled itself in the first half of this century, has again doubled itself during the last thirty years. In 1881 the population increased to 131,233, or to 30 people per acre. The largest increase has been in St. Paul's, Deptford, where the population, which in 1841 was 186,111, or only about 12 people per acre, doubled itself in the succeeding twenty years, and has again doubled itself during the last ten years, the population having increased rapidly to 76,752, and to nearly 49 people (48·73) per acre in 1881. In the adjoining sub-district of St. Nicholas, Deptford, where the Government dockyard was situated, there has been, as might be expected, great fluctuations in the population, and between 1861 and 1871 a decrease of as much as 20 per cent. occurred; this has, however, during the last decade been followed by a corresponding increase.

The large area of Greenwich Park included in this district renders it somewhat difficult to estimate the density of the population. The most thickly populated sub-districts are those of St. Nicholas and West Greenwich, and they both attained their maximum density in 1861, the population in the former case, which was at that time 75 people to the acre, having decreased to 73 in 1881, and in the latter from 78 to 71½ people to the acre.*

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	3,417	32,621	—	—	—	9·55	—
'11	,,	36,780	12·75	4,159	—	10·76	—
'21	,,	41,530	12·91	4,750	—	12·15	—
'31	,,	45,903	10·53	4,373	—	13·43	—
'41	,,	55,212	20·28	9,309	2·62	16·16	6·16
'51	,,	66,998	21·35	11,786	3·12	19·61	6·28
'61	,,	88,975	28·32	18,977	3·87	25·16	6·50
'71	,,	100,600	17·01	14,625	4·73	29·44	6·22
'81	,,	131,233	30·45	30,633	5·79	38·41	6·63
Total increase	—	—	—	98,612	—	—	—

* See Table D, Appendix.

Lewisham.

This district which, with the exception of Wandsworth, is the largest in the metropolis, was originally much larger in extent, and comprised the former sub-district of Plumstead (including the parish of Charlton and the Liberty of Kidbrooke), with a total area of 5,377 acres. In 1871 Plumstead was detached from it and formed into the Charlton and Plumstead sub-districts of the new district of Woolwich.

The four Lewisham sub-districts are Eltham, Lee (ex-Kidbrooke Liberty), Lewisham Village, and Sydenham. The total area is 11,377 acres, and the population in 1801 only amounted to 6,085, or to 0·53 of a person per acre.

The population, which in 1831 had just doubled itself, was still only 1 person per acre, continued to increase very rapidly from 1851, more especially in the sub-district of Sydenham, where it considerably more than doubled itself in the first ten years, and very nearly did so in the next; the population in 1841 was only 4,501, or 0·50 of a person per acre, increased to 26,076, or to over 16 persons per acre in 1881, and with the exception of a part of Lewisham, which has 19 people per acre, is now the most densely populated part of this district.*

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	11,377	6,085	—	—	—	0·53	—
'11	„	9,019	48·22	2,934	—	0·79	—
'21	„	10,899	20·85	1,880	—	0·96	—
'31	„	12,896	18·32	1,997	—	1·13	—
'41	„	16,946	31·40	4,050	0·26	1·49	5·78
'51	„	21,184	25·01	4,238	0·33	1·86	5·72
'61	„	31,979	50·96	10,795	0·46	2·81	6·06
'71	„	51,557	61·22	19,578	0·75	4·53	6·03
'81	„	73,327	42·23	21,770	1·06	6·45	6·13
Total increase	—	—	—	67,242	—	—	—

Woolwich District.

This district, formed in 1871, as already stated, from portions of the former districts of Greenwich and Lewisham, has five sub-districts, viz., Charlton, Woolwich Dockyard, Woolwich Arsenal, Plumstead East, and Plumstead West; its total area is 6,459 acres, and the population in 1801 was 11,797, or a little under 2 people per acre. In the Woolwich sub-district there has been great fluctuations in the population. During the first decade of the century its population increased 73 per cent., which was followed by a decrease in the next. Between 1861 and 1871 there was again a very considerable decrease,† the population

* See Table C, Appendix, p. 402. † See Table B, p. 396.

having in that period fallen from 37 to 32 people per acre. During the last ten years there has been again a slight increase. The total population of Plumstead in 1881 was 80,845, or about 12½ people per acre. A maximum density of 57 people per acre was attained in the sub-district of Woolwich Dockyard in 1861, in 1881 it became reduced to 44. The large sub-district of Charlton, comprising an area of 1,979 acres, had in 1881 an average density of only 5½ people per acre; and the large sub-district of Plumstead, with 3,367 acres, a density of something less than 10 people per acre.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	6,459	11,797	—	—	—	1·83	—
'11	„	20,441	73·27	8,644	—	3·16	—
'21	„	21,093	3·19	652	—	3·27	—
'31	„	23,191	9·95	2,098	—	3·59	—
'41	„	31,853	37·35	8,662	0·63	4·93	7·83
'51	„	46,018	44·47	14,165	0·92	7·12	7·74
'61	„	75,473	64·01	29,455	1·40	11·69	8·36
			Decrease.	Decrease.			
'71	„	73,380	− 2·17	− 2,093	1·63	11·36	6·99
'81	„	80,845	10·17	7,465	1·81	12·52	6·91
Total increase	—	—	—	69,048	—	—	—

The Total Population of London.

The total area of the twenty-nine registration districts into which the metropolis is now divided is 75,334 acres, inclusive of, and 74,427 acres, exclusive of the water area. The latter area has in all cases been adopted for the purpose of ascertaining the population per acre in the different districts. The population within this area in 1801 was 958,863, or a little under 13 people per acre. It considerably more than doubled itself in the next forty years; and very nearly doubled again in the next thirty years. Although the percentage of increase during the last ten years is considerably less than in the decades 1821 and 1851, the addition to the population in that period, viz., 562,000, is by far the largest yet attained. In order to realise the magnitude of this large increase, it may be mentioned that it represents rather more than the aggregate population of the two most populous districts in the metropolis, viz., Kensington and Islington,* which have an

	Population, 1881.	Acres.
* Kensington	270,369	3,418
Islington	282,865	3,092
	553,234	6,510

aggregate area of 6,510 acres, and that it also represents an addition in the course of the last ten years of $7\frac{1}{2}$ people per acre distributed over the entire area of the metropolis.

Decades.	Acreage, ex-Water.	Population.	Rates of Increase.	Amount of Increase.	Houses per Acre.	Population per Acre.	Population per House.
1801	74,427	958,863	—	—	—	12·88	—
'11	,,	1,138,815	18·78	179,952	—	15·30	—
'21	,,	1,378,947	21·07	240,132	—	18·53	—
'31	,,	1,654,994	20·02	276,047	—	22·24	—
'41	,,	1,948,417	17·73	293,423	3·37	26·18	7·42
'51	,,	2,362,236	21·24	413,819	4·11	31·74	7·72
'61	,,	2,803,989	18·70	441,753	4·83	37·67	7·80
'71	,,	3,254,260	16·06	450,271	5·61	43·73	7·79
'81	,,	3,816,483	17·28	562,223	6·53	51·28	7·85
Total increase	—	—	—	2,857,620	—	—	—

The future Population of London.

The results of the foregoing investigations show not only the extent of the decrease which has occurred in the population of the city and some of the more central districts, but that there are indications that the point of maximum density has already been reached in many of the better class of suburban residential districts and sub-districts, and that for the future the population will not continue to increase there to any appreciable extent; it is clear therefore that the population included within the area of the existing registration districts of the metropolis cannot continue to increase at the present rapid rate for any lengthened period.

The accompanying table gives the population and population per acre of each of the present registration districts, together with an estimate of what the population would be, assuming that the writer's views as to the limit of the maximum density of population in each particular district are correct. The writer estimates the maximum population within the present metropolitan registration area at about 7 millions, equivalent to about 94 people per acre, and the time it will take to reach this maximum about thirty-six years, assuming the average rate of increase of population which obtained in the metropolis during the last eighty years, viz., 18·86* per cent. per decade, is maintained for that period in the future.† Inasmuch, however, as a maximum increase of 21·24 per cent. was reached in 1851, and has now decreased to 17·28 per cent. (notwithstanding a slight increase during the last decade), it seems highly improbable that the future rate of increase will ever attain anything like the average of the last eighty years.

* See Table E, p. 431.

† See Table F, p. 431.

The average decrement in the rate of increase since 1851 has been 6·16 per cent. per decade,* and assuming this to continue, the time it would take for the population to increase to the 7 millions given in the estimate would be about twenty-seven years from 1881.†

Table G is a comparative statement showing the population and rates of increase of the population of London, Liverpool, and Manchester during the present century.

Table H is a statement showing the population and rates of increase of the population of London in each of the counties of Middlesex, Surrey, and Kent.

Table J gives the population and rates of increase of population in some of the extra metropolitan districts in 1871 and 1881.

TABLE X.—*Population of London in* 1881, *and Estimated Future Population.*

Number.	Registration District.	Acreage, ex-Water.	Population, 1881.	Population per Acre.	Estimated Population per Acre.	Estimated Future Population.
					Maximum.	
1	Kensington	3,418	270,369	79·10	—	270,369
2	Fulham	3,996	114,839	28·74	80	319,680
3	Chelsea	793	88,128	111·13	—	88,128
4	St. George, Hanover Square	1,895	149,748	79·02	—	149,748
5	Westminster	216	46,549	215·51	200	43,200
6	Marylebone	1,499	154,910	103·34	—	154,910
7	Hampstead	2,248	45,452	20·22	80	179,841
8	Pancras	2,653	236,258	89·05	100	265,300
9	Islington	3,092	282,865	91·49	150	463,800
10	Hackney	3,834	186,462	48·63	100	383,400
11	St. Giles	245	45,382	185·23	150	36,750
12	Strand	403	33,582	83·33	—	33,582
13	Holborn	812	151,835	187·00	150	121,800
14	London City	668	51,439	77·01	—	51,439
15	Shoreditch	634	126,591	199·67	—	126,591
16	Bethnal Green	738	126,961	172·03	200	147,600
17	Whitechapel	372	71,363	191·84	—	71,363
18	St. George-in-the-East	213	47,157	221·40	200	42,600
19	Stepney	421	58,543	139·06	200	84,200
20	Mile End Old Town	673	105,613	156·92	200	134,600
21	Poplar	2,117	156,510	73·93	100	211,700
22	St. Saviour's, Southwark	1,119	195,164	174·41	200	223,800
23	St. Olave, Southwark	1,331	134,632	101·15	200	266,200
24	Lambeth	3,942	253,699	64·36	100	394,200
25	Wandsworth	11,392	210,434	18·47	80	911,360
26	Camberwell	4,450	186,593	41·93	80	356,000
27	Greenwich	3,417	131,233	38·41	80	273,360
28	Lewisham	11,377	73,327	6·45	80	910,160
29	Woolwich	6,459	80,845	12·52	50	322,950
		74,427	3,816,483	51·28	94·57	7,038,631

* See Table E.

† See Table F.

Although for the reasons given in this paper it seems improbable that the population of London within its present limits will increase beyond about twice its present average density, there is nothing to indicate that it will not continue to do so as rapidly as heretofore in the outlying suburban districts.

This overflow of the population of London into the extra metropolitan districts has already begun, and during the last two decades has been very appreciable, the increase during the last ten years in the districts given in Table J has amounted to over 180,000 persons. These large districts, destined at no distant date to become part of the greater London of the future, have altogether an area of over 46,000 acres, and although the population at the date of the last census had increased to over 400,000, still it only amounts to 9 people per acre; and assuming as in the case of the existing London registration districts that the maximum density obtainable would be 94 people per acre, there is still room there for nearly 4 million more inhabitants.

The rapid growth of the population of London since 1841 has been very remarkable. The principal main lines of railway which have their termini in London had at that time only recently been completed and in operation; the effect however of the opening up of a new and rapid means of communication between the metropolis and the great manufacturing districts, is clearly perceptible in the very large increase in the population which occurred during the next ten years, the largest increase ever yet attained considered as a *percentage*. It is unquestionable that to the introduction of the railway system and to the subsequent construction of the network of suburban lines we owe the remarkable and unprecedented increase of the population of London which has since occurred. It may indeed be safely asserted that without the agency of steam power, the London of to-day would be an impossibility, and further that if owing to sudden invasion or any other unforeseen calamity, the facilities now afforded by steam power for supplying the daily wants of over 4 million inhabitants were destroyed, London would be reduced to the verge of starvation in a single week.

Previous to the introduction of railways and steam navigation, the food supplies of London were mainly derived from the rural districts in its vicinity; now, however, by means of the vastly increased speed and tractive power of steam all this has been changed, and its supplies are drawn from all parts of the world.

If therefore, according to Malthus, the only limit to the increase of population is the sufficiency of food supply, London with its enormous wealth and industrial resources must long continue to have the command of the great food markets of the world; and so long as it has this, there would appear to be practically no limit to

the increase of its population. It must not however be forgotten that if the population is to increase to anything like the vast dimensions indicated in this paper, the present railway facilities will have very largely to be increased, and special means provided for relieving the congested state of the street traffic, which even at the present time, during certain periods of the day, is almost unmanageable.

Much that is interesting might be said in relation to the historical facts connected with the alterations and enlargements of the boundaries of the different districts, and also as regards the various trades and industries in different localities, and their influence on the growth of the population; these matters, however, do not come within the scope of the present paper, the subject has already been dealt with by Mr. Fletcher in a paper read at a meeting of the Society in 1844,* to which, as well as to a paper by Mr. Jopling in 1851,† dealing with the question of the future increase of the population, the writer of this paper would venture to draw attention.

APPENDIX.

TABLE A.—*Population of London. Acreage (ex-Water) in* 1851, 1861, 1871, *and* 1881 *compared. (Sub-Districts in* 1881.)

Districts and Sub-Districts.	1851.	1861.	1871.	1881.
(1) *Kensington.*				
1. St. Mary, Paddington	827	795	791	791
2. St. John „	450	450	441	441
3. Kensington Town	1,244	1,244	1,493	1,493
4. Brompton	698	698	693	693
	3,219	3,187	3,418	3,418
(2) *Fulham.*				
1. St. Peter, Hammersmith	189	189	185	185
2. St. Paul „	2,103	2,103	2,095	2,095
3. Fulham	1,684	1,684	1,716	1,716
	3,976	3,976	3,996	3,996
(3) *Chelsea.*				
1. Chelsea, south	303	303	304	304
2. „ north-west	213	213	209	209
3. „ north-east	284	284	280	280
	800	800	793	793

* The Metropolis, its boundaries, &c. *Journal of the Statistical Society*, vol. vii, p. 69.

† Sanitary Statistics of the Metropolis. *Journal of the Statistical Society*, vol. xiv, p. 339.

TABLE A.—*Population of London. Acreage (ex-Water)—Contd.*

Districts and Sub-Districts.	1851.	1861.	1871.	1881.
(4) *St. George, Hanover Square.*				
1. Hanover Square	445	445	418	418
2. Mayfair	136	136	137	137
3. Belgrave	525	525	543	543
4. St. John, Westminster	210	210	211	211
5. St. Margaret, Westminster	629	629	586	586
	1,945	1,945	1,895	1,895
(5) *Westminster.*				
1. Golden Square	85	54	54	54
2. Berwick Street, St. James's Square	79	110	108	108
3. St. Anne, Soho	53	53	54	54
	217	217	216	216
(6) *Marylebone.*				
1. All Souls	112	112	112	112
2. Cavendish Square	113	113	112	112
3. Rectory	116	116	116	116
4. St. Mary	108	108	108	108
5. Christ Church	518	518	508	508
6. St. John	542	542	543	543
	1,509	1,509	1,499	1,499
(7) *Hampstead*	2,252	2,252	2,248	2,248
(8) *St. Pancras.*				
1. Regent's Park	427	427	410	410
2. Tottenham Court	145	145	144	144
3. Gray's Inn Lane	155	155	154	154
4. Somers Town	184	184	183	183
5. Camden ,,	171	171	165	165
6. Kentish ,,	1,634	1,634	1,597	1,597
	2,716	2,716	2,653	2,653
(9) *Islington.*				
1. Islington, west	1,228	1,228	1,222	1,222
2. ,, east	1,899	1,899	1,870	1,870
	3,127	3,127	3,092	3,092
(10) *Hackney.*				
1. Stoke Newington	639	639	589	589
2. Stamford Hill	615	615	600	600
3. West Hackney	472	472	466	466
4. Hackney	1,731	1,731	1,760	1,760
5. South Hackney	472	472	419	419
	3,929	3,929	3,834	3,834
(11) *St. Giles.*				
1. St. George, Bloomsbury	122	122	122	122
2. St. Giles, south	63	63	64	64
3. ,, north	60	60	59	59
	245	245	245	245

TABLE A.—*Population of London. Acreage (ex-Water)—Contd.*

Districts and Sub-Districts.	1851.	1861.	1871.	1881.
(12) *Strand.*				
1. St. Martin-in-the-Fields and Charing Cross	283	283	286	286
2. St. Mary-le-Strand	53	53	56	56
3. St. Clement Danes	36	34	61	61
	372	370	403	403
(13) *Holborn.*				
1. St. George the Martyr	103	103	104	104
2. St. Andrew, eastern	33	33	33	33
3. Saffron Hill	60	60	60	60
4. St. James's, Clerkenwell	74	74	73	73
5. Amwell	82	82	83	83
6. Pentonville	134	134	133	133
7. Goswell Street	90	90	91	91
8. Old Street	52	52	51	51
9. City Road	77	77	72	72
10. Whitecross Street	33	33	33	33
11. Finsbury	58	58	79	79
	796	796	812	812
(14) *London, City.*				
1. St. Botolph	85	85	83	83
2. Cripplegate	68	68	66	66
3. St. Sepulchre	47	47	48	48
4. St. Bride	77	79	83	83
5. Castle Baynard and Christchurch and Queenhithe	203	203	211	211
6. Allhallows, Barking	84	84	82	82
7. Broad Street	92	92	95	95
	656	658	668	668
(15) *Shoreditch.*				
1. Holywell	68	68	67	67
2. St. Leonard	75	75	74	74
3. Hoxton New Town	130	130	127	127
4. „ Old „	116	116	115	115
5. Haggerstone	257	257	251	251
	646	646	634	634
(16) *Bethnal Green.*				
1. Hackney Road	141	141	140	140
2. Green	391	391	374	374
3. Church	132	132	131	131
4. Town	96	96	93	93
	760	760	738	738
(17) *Whitechapel.*				
1. Spitalfields	78	78	77	77
2. Mile End New Town	64	64	58	58
3. Whitechapel, north	58	58	59	59
4. „ Church	47	47	46	46
5. Goodman's Fields	51	51	51	51
6. Aldgate	85	85	81	81
	383	383	372	372

TABLE A.—*Population of London. Acreage (ex-Water)—Contd.*

Districts and Sub-Districts.	1851.	1861.	1871.	1881.
(18) *St. George-in-the-East.*				
1. St. Mary	62	62	62	62
2. St. Paul	84	84	84	84
3. St. John	97	97	67	67
	243	243	213	213
(19) *Stepney.*				
1. Shadwell	109	109	99	99
2. Ratcliffe	113	113	108	108
3. Limehouse	249	249	214	214
	471	471	421	421
(20) *Mile End Old Town.*				
1. Mile End Old Town, western	191	191	189	189
2. „ eastern	490	490	484	484
	681	681	673	673
(21) *Poplar.*				
1. Bow	1,428	1,428	526	526
2. Bromley			587	587
			1,113	1,113
3. Poplar	1,185	1,185	1,004	1,004
	2,613	2,613	2,117	2,117
(22) *St. Saviour, Southwark.*				
1. Christchurch, Southwark	74	74	77	77
2. St. Saviour's, „	126	126	126	127
3. Kent Road	105	105	103	103
4. Borough Road	65	65	64	64
5. London „	112	112	117	117
6. Trinity, Newington	142	142	146	146
7. St. Peter, Walworth	321	321	319	318
8. St. Mary, Newington	161	161	167	167
	1,106	1,106	1,119	1,119
(23) *St. Olave, Southwark.*				
1. St. Olave, Southwark	56	56	55	56
2. St. John, Horsleydown	69	69	69	69
3. Leather Market	92	92	93	93
4. St. Mary Magdalen	142	142	142	142
5. St. James's, Bermondsey	427	427	391	392
6. Rotherhithe	749	749	578	579
	1,535	1,535	1,328	1,331

TABLE A.—*Population of London. Acreage (ex-Water)—Contd.*

Districts and Sub-Districts.	1851.	1861.	1871.	1881.
(24) *Lambeth.*				
1. Waterloo Road, first	68	68	67	67
2. ,, second	99	99	100	100
3. Lambeth Church, first	154	154	162	162
4. ,, second	186	186	186	186
5. Kennington, first	459	452	490	490
6. ,, second	510	510	498	498
7. Brixton	1,445	1,445	1,429	1,430
8. Norwood	976	976	1,009	1,009
	3,897	3,890	3,941	3,942
(25) *Wandsworth.*				
1. Clapham	1,233	1,233	1,137	1,137
2. Battersea	2,177	2,177	2,203	2,170
3. Wandsworth	2,432	2,432	2,405	2,405
4. Putney	2,136	2,136	2,215	2,215
5. Streatham	3,465	3,465	3,465	3,465
	11,443	11,443	11,435	11,392
(26) *Camberwell.*				
1. Dulwich	1,423	1,423	1,450	1,450
2. Camberwell	1,339	1,339	1,378	1,378
3. Peckham	1,146	1,146	1,175	1,175
4. St. George	434	434	447	447
	4,342	4,342	4,450	4,450
(27) *Greenwich.*				
1. St. Paul, Deptford	1,589	1,587	1,574	1,575
2. St. Nicholas, Deptford	110	110	108	108
3. Greenwich, west	301	301	307	307
4. ,, east	1,425	1,425	1,427	1,427
	3,425	3,423	3,416	3,417
(28) *Lewisham.*				
1. Eltham	4,350	4,350	4,417	4,417
2. 2*a*. Lee Park	1,644	1,273	1,234	1,234
2*b*. Lewisham, part of		371	366	366
3. Lewisham	5,418	3,780	3,744	3,744
4. Sydenham		1,638	1,616	1,616
	11,412	11,412	11,377	17,377
(29) *Charlton.*				
1. 1*a*. Charlton	1,251	1,251	1,231	1,231
1*b*. Kidbrooke Liberty	755	755	748	748
2. Woolwich Dockyard	411	411	399	399
3. ,, Arsenal	756	756	714	714
4. Plumstead, west	3,371	3,371	349	349
5. ,, east			3,018	3,018
			3,367	3,367
	6,544	6,544	6,459	6,459
Total	75,260	75,219	74,455	74,427

TABLE B.—*London. Population of London in Sub-Districts,*

	Districts and Sub-Districts.	Parish, Township, or Place.	1801.	1811.	Per Cent.	1821.	Per Cent.
1	*Kensington*—						
	1. St. Mary, Paddington	Paddington, part of	1,881	4,609	*145·03*	6,476	*40·51*
	2. St. John ,,	,,					
	3. Kensington	Kensington, part of	8,556	10,886	*27·33*	14,428	*32·54*
	4. Brompton	,,					
	Total	—	10,437	15,495	*48·46*	20,904	*34·91*
2	*Fulham*—						
	1. St. Peter, Hammersmith	Hammersmith, part of	5,600	7,393	*32·02*	8,809	*19·15*
	2. St. Paul ,,	,,					
	3. Fulham	Fulham	4,428	5,903	*33·31*	6,492	*9·98*
	Total	—	10,028	13,296	*32·59*	15,301	*15·08*
3	*Chelsea*—						
	1. Chelsea, south	Chelsea, part of	11,604	18,262	*57·38*	26,860	*47·08*
	2. ,, north-west	,,					
	3. ,, north-east	,,					
	Total	—	11,604	18,262	*57·38*	26,860	*47·08*
4	*St. George, Hanover Square*—						
	1. Hanover Square	St. George's, part of	38,440	41,687	*8·45*	46,384	*11·27*
	2. Mayfair	,,					
	3. Belgrave	(1) ,, (2) Buckingham Palace					
	4. St. John, Westminster	St. John the Evangelist	8,375	10,615	*26·75*	16,835	*58·60*
	5. St. Margaret ,,	St. Margaret	17,508	19,202	*9·68*	22,568	*17·53*
	Total	—	64,323	71,504	*11·16*	85,787	*19·97*
5	*Westminster*—						
	1. Golden Square	St. James, Westminster	34,462	34,093	— *1·07*	33,819	— *0·80*
	2. Berwick Street	,,					
	3. St. James's Square	,,					
	4. St. Anne, Soho	St. Anne, Soho	11,637	12,288	*5·59*	15,215	*23·82*
	Total	—	46,099	46,381	*0·61*	49,034	*5·72*
6	*Marylebone*—						
	1. All Souls	St. Marylebone, part of	63,982	75,624	*18·20*	96,040	*27·00*
	2. Cavendish Square	,,					
	3. Rectory	,,					
	4. St. Mary	,,					
	5. Christchurch	,,					
	6. St. John	,,					
	Total	—	63,982	75,624	*18·20*	96,040	*27·00*
7	*Hampstead*—						
	1. Hampstead	St. John	4,343	5,843	*34·54*	7,263	*24·30*
8	*Pancras*—						
	1. Regent's Park	St. Pancras, part of	31,779	46,333	*45·80*	71,838	*55·05*
	2. Tottenham Court	,,					
	3. Gray's Inn Lane	,,					
	4. Somers Town	,,					
	5. Camden ,,	,,					
	6. Kentish ,,	,,					
	Total	—	31,779	46,333	*45·80*	71,838	*55·05*

Parishes, &c., from 1801 *to* 1881. (*Rates of Increase.*)

1831.	Per Cent.	1841.	Per Cent.	1851.	Per Cent.	1861.	Per Cent.	1871.	Per Cent.	1881.	Per Cent.
14,540	*124·52*	6,436	...	17,252	*171·86*	30,015	*126·15*	58,728	*50·53*	69,888	*19·00*
		18,737	...	29,053	*55·06*	36,769	*26·56*	38,085	*3·58*	37,330	*— 1·98*
		25,173	*72·13*	46,305	*83·95*	75,784	*63·66*	96,813	*27·75*	107,218	*10·75*
20,902	*44·87*	17,369	...	29,183	*68·02*	51,910	*77·88*	91,645	*76·55*	120,141	*31·09*
		9,465	...	14,870	*57·11*	18,198	*22·38*	28,654	*57·46*	43,010	*50·10*
		26,834	*28·38*	44,053	*64·17*	70,108	*59·14*	120,299	*71·59*	163,151	*35·62*
35,442	*69·55*	52,007	*46·74*	90,358	*73·74*	145,892	*61·46*	217,112	*48·82*	270,369	*24·53*
10,222	*16·04*	3,565	...	4,467	*25·30*	5,415	*21·77*	6,662	*23·03*	7,599	*14·06*
		9,888	...	13,293	*34·43*	19,104	*43·71*	36,029	*88·59*	64,340	*78·58*
		13,453	*31·61*	17,760	*32·01*	24,519	*38·06*	42,691	*74·11*	71,939	*68·51*
7,317	*12·71*	9,319	*27·36*	11,886	*27.05*	15,539	*30·73*	23,350	*50·27*	42,900	*83·73*
17,539	*14·63*	22,772	*29·84*	29,646	*30·18*	40,058	*35·12*	66,041	*64·86*	114,839	*73·89*
32,371	*20·52*	14,467	...	19,050	*31·68*	21,654	*13·67*	26,420	*22·01*	30,396	*15·05*
		12,638	...	17,669	*39·81*	19,899	*12·62*	23,277	*16·98*	24,925	*7·08*
		13,074	...	19,819	*51·59*	21,886	*10 43*	21,392	*— 2·26*	32,807	*53·36*
32,371	*20·52*	40,179	*24·12*	56,538	*40·71*	63,439	*12·21*	71,089	*12·06*	88,128	*23·97*
58,209	*25·49*	21,398	...	20,216	*— 5·52*	19,773	*— 2·19*	18,698	*— 5·44*	16,862	*— 9·82*
		15,048	...	12,980	*—13·74*	12,885	*— 0·74*	13,007	*0·95*	13,491	*3·72*
		30,106	...	40,034	*32·98*	55,113	*37·67*	57,972	*5·19*	59,220	*2·15*
		66,552	*14·38*	73,230	*10·03*	87,771	*19·86*	89,677	*2·17*	89,573	*— 0·12*
22,648	*34·53*	26,223	*15·78*	34,295	*30·78*	37,483	*9·29*	38,478	*2·66*	35,496	*— 7·75*
25,529	*13·12*	30,489	*19·43*	31,314	*2·71*	30,730	*— 7·87*	27,781	*— 9·59*	24,679	*—11·17*
106,386	*24·88*	123,264	*15·86*	138,839	*12·64*	155,984	*12·34*	155,936	*— 0·03*	149,748	*— 3·97*
37,053	*9·56*	13,612	...	14,139	*3·87*	13,966	*— 1·22*	12,860	*— 7·92*	11,608	*— 9·74*
		10,449	...	10,798	*3·34*	10,607	*— 1·77*	10,287	*— 3·02*	18,333	—
		13,337	...	11,469	*—14·01*	10,753	*— 6·24*	10,472	*— 2·61*		
		37,398	*0·93*	36,406	*— 2·66*	35,326	*— 2·97*	33,619	*— 4·83*	29,941	*—10·94*
15,600	*2·53*	16,480	*5·64*	17,335	*5·19*	17,426	*0·52*	17,562	*0·78*	16,608	*— 5·43*
52,653	*7·38*	53,878	*2·33*	53,741	*— 1·26*	52,752	*— 1·84*	51,181	*— 2·98*	46,549	*— 9·05*
122,206	*27·24*	27,003	...	28,841	*6·84*	29,952	*3·85*	28,579	*— 4·58*	26,759	*— 6·33*
		15,192	...	14,687	*— 3·32*	15,090	*2·74*	15,425	*2·22*	14,891	*— 3·46*
		26,405	...	27,125	*3·44*	26,692	*— 3·41*	26,384	*— 1·15*	24,809	*— 5·97*
		309	...	508							
		21,988	...	22,814	*3·76*	22,493	*— 1·41*	21,786	*— 3·14*	21,118	*— 3·07*
		28,911	...	33,895	*17·24*	34,913	*3·00*	33,944	*— 2·78*	33,700	*— 0·22*
		18,356	...	29,826	*62·49*	32,540	*9·10*	33,136	*1·83*	33,633	*1·50*
122,206	*27·24*	138,164	*13·05*	157,696	*14·42*	161,680	*2·52*	159,254	*— 1·50*	154,910	*— 2·73*
8,588	*18·24*	10,093	*17·52*	11,986	*18·75*	19,106	*59·40*	32,281	*68·96*	45,452	*40·80*
103,548	*44·14*	26,488	...	31,918	*20·50*	34,927	*9·43*	38,200	*9·37*	39,115	*2·40*
		26,800	...	28,433	*6·09*	29,371	*3·30*	29,370	Nil	27,729	*— 5·59*
		22,149	...	26,523	*19·75*	27,808	*4·85*	29,221	*5·08*	30,247	*3·51*
		28,910	...	35,641	*33·66*	39,099	*1·19*	38,533	*— 1·45*	34,369	*—10.81*
		15,018	...	21,115	*40·60*	23,266	*10·19*	17,943	*—22·88*	17,311	*— 3·52*
		10,398	...	23,326	*124·39*	44,317	*89·99*	68,198	*53·89*	87,487	*28·28*
103,548	*44·14*	129,763	*25·31*	166,956	*28·67*	198,788	*19·06*	221,465	*11·41*	236,258	*6·68*

TABLE B.—*Population of London in Sub-Districts,*

	Districts and Sub-Districts.	Parish, Township, or Place.	1801.	1811.	Per Cent.	1821.	Per Cent.
9	*Islington*—						
	1. Islington, west	St. Mary, part of	10,212	15,065	*47·52*	22,417	*48·80*
	2. „ east	„					
	Total	—	10,212	15,065	*47·52*	22,417	*48·80*
10	*Hackney*—						
	1. Stoke Newington	St. Mary	1,462	2,149	*46·99*	2,670	*24·24*
	2. Stamford Hill	St. John, Hackney, part of	12,730	16,771	*31·74*	22,494	*34·13*
	3. West Hackney	„ part of West Hackney					
	4. Hackney	„ Hackney, part of					
	5. South Hackney	South Hackney, part of					
	Total	—	14,192	18,920	*33·32*	25,164	*33·00*
11	*St. Giles*—						
	1. St. George, Bloomsbury	St. George, part of	7,738	13,864	*79·17*	16,110	*16·20*
	2. St. Giles, south	St. Giles-in-the-Fields, part of	28,764	34,672	*20·54*	35,683	*2·92*
	3. „ north	„					
	Total	—	36,502	48,536	*32·97*	51,793	*6·71*
12	*Strand*—						
	St. Martin-in-the-Fields.	Formerly Strand and St. Martin-in-the-Fields, ex-St. Anne, Soho					
	1 Charing Cross	St. Martin-in-the-Fields, &c.	27,437	26,834	– *2·20*	28,893	*7·67*
	1 Long Acre	„ part of					
	2. St. Mary-le-Strand	St. Mary, St. Paul's, Covent Garden, &c.	23,417	24,500	*4·62*	26,259	*7·18*
	3. St. Clement Danes	St. Clement Danes					
	Total	—	50,854	51,334	*0·94*	55,152	*7·44*
13	*Holborn*—						
	1. St. George the Martyr	Formerly sub-district of Holborn, 1801 to 1861	22,820	24,624	*7·90*	27,109	*10·09*
	2. St. Andrew, eastern						
	3. Saffron Hill	Formerly sub-district of Clerkenwell	11,798	11,868	*0·59*	14,154	*19·26*
	4. St. James, Clerkenwell	St. James's, Clerkenwell	23,396	30,537	*30·52*	39,105	*28·06*
	5. Amwell	„					
	6. Pentonville	„					
	7. Goswell Street	„ Formerly sub-district of St. Luke's					
	8. Old Street	St. Luke, part of	26,281	32,545	*21·07*	40,876	*25·60*
	9. City Road	„					
	10. Whitecross Street	„					
	11. Finsbury	„					
	Total	—	84,895	99,574	*17·29*	121,244	*21·76*

Parishes, &c., from 1801 *to* 1881. (*Rates of Increase*)—*Contd.*

1831.	Per Cent.	1841.	Per Cent.	1851.	Per Cent.	1861.	Per Cent.	1871.	Per Cent.	1881.	Per Cent.
37,316	66·46	25,396	...	47,881	88·54	75,442	57·56	97,820	29·66	121,452	24·16
		30,294	...	47,448	56·62	79,899	68·39	115,958	45·13	161,413	39·19
37,316	66·46	55,690	49·24	95,329	71·18	155,341	62·95	213,778	37·62	282,865	32·32
3,480	30·34	4,490	29·02	4,840	7·80	6,608	36·53	9,841	48·93	22,781	131·49
		5,140	...	5,549	7·96	5,483	− 1·19	6,598	20·33	9,277	40·60
31,047	38·02	11,108	...	18,732	68·64	24,265	29·54	28,069	15·68	37,610	33·99
		14,634	...	20,850	42·48	30,886	48·14	50,104	62·22	76,911	53·50
		6,889	...	8,458	22·78	16,053	89·80	30,339	88·99	39,883	31·46
		37,771	21·66	53,589	41·88	76,687	43·10	115,110	50·10	163,681	42·19
34,527	37·21	42,261	22·40	58,429	38·26	83,295	42·56	124,951	50·01	186,462	49·23
16,475	2·27	16,981	3·07	16,807	−1·02	17,392	3·48	17,853	2·65	16,681	− 6·57
36,432	2·10	19,634	...	19,951	1·62	19,483	− 2·35	19,109	− 1·92	14,864	−22·21
		17,677	...	17,456	−1·25	17,201	− 1·46	16,594	− 3·53	13,837	16·62
		37,311	2·41	37,407	0·26	36,684	− 1·93	35,703	− 2·67	28,701	−19·61
52,907	2·15	54,292	2·62	54,214	−0·14	54,076	− 0·26	53,556	− 0·96	45,382	−15·26
23,970	7·04	13,299	...	12,587	...	11,071	...	9,859	...	9,126	...
		11,792	...	12,053	...	11,618	...	11,379	...	8,382	...
		25,091	4·68	24,640	−1·80	22,689	− 7·92	21,238	− 6·40	17,508	−17·56
26,415	0·59	11,732	...	11,615	−1·00	10,346	−10·93	9,378	− 9·36	7,515	−19·87
		15,386	...	15,510	0·81	15,207	− 1·95	10,723	−29·49	8,559	−20·18
		27,118	2·66	27,125	0·03	25,553	− 5·80	20,101	−21·34	16,074	−20·03
50,385	−8·64	52,209	3·62	51,765	−0·85	48,242	− 6·81	41,339	−14·31	33,582	−18·76
28,018	3·35	17,407	...	18,813	8·08	19,903	5·79	20,521	3·11	18,671	− 9·02
		12,613	...	13,971	10·77	12,947	− 7·33	13,529	4·97	10,706	−20·87
		30,020	7·14	32,784	9·21	32,850	0·20	34,050	3·65	29,377	−13·72
14,678	3·70	14,441	1·62	13,837	−4·18	12,012	−13·19	9,066	−24·52	6,533	−27·94
47,634	21·81	19,417	...	21,529	10·87	19,152	−11·04	18,917	− 1·23	17,516	7·41
		13,490	...	15,720	16·53	17,250	9·73	16,884	− 2·12	19,281	14·20
		9,522	...	11,904	25·01	13,079	9·87	13,337	1·97	14,773	10·77
		14,327	...	15,625	9·06	16,200	3·68	16,242	0·26	17,506	7·78
		56,756	19·10	64,778	14·14	65,681	1·39	65,380	− 0·46	69,076	5·65
46,642	14·11	9,841	...	10,617	7·88	11,504	8·36	12,161	5·71	11,541	− 0·63
		14,711	...	16,840	14·47	17,860	6·06	18,301	2·47	18,628	1·79
		12,963	...	13,657	5·35	14,778	8·21	13,792	− 6·67	9,217	−34·03
		12,314	...	12,941	5·09	12,931	− 0·18	10,741	−16·94	7,463	−30·52
		49,829	6·83	54,055	8·48	57,073	5·58	54,995	− 3·64	46,849	−14·81
136,972	12·97	151,046	10·28	165,454	9·53	167,616	1·31	163,491	− 2·46	151,835	− 7·13

TABLE B.—*Population of London in Sub-Districts,*

	Districts and Sub-Districts.	Parish, Township, or Place.	1801.	1811.	Per Cent.	1821.	Per Cent.
14	*London, City*—						
	1. St. Botolph	St. Botolph without Aldgate	19,003	17,481	− 8·01	19,207	9·87
	2. Cripplegate	St. Giles and St. Botolph	16,828	17,182	2·10	18,399	7·08
	3. St. Sepulchre	St. Bartholomew and St. Sepulchre	11,689	12,336	5·54	12,025	− 2·52
	4. St. Bride	St. Bride's, St. Andrew's, &c.	16,698	17,024	1·95	18,013	5·81
	5. Castle Baynard	Whitefriars precinct	8,737	8,074	− 7·59	8,646	7·09
		St. Anne's, Blackfriars	15,652	14,286	− 8·73	14,120	− 1·16
		St. Andrew's, &c.	14,015	12,077	− 13·83	11,668	3·39
			38,404	34,437	− 10·33	34,434	Nil
	6. Allhallows, Barking	St. Dunstan, Allhallows	13,301	11,314	− 14·94	11,048	− 2·35
	7. Broad Street	St. Stephen, Coleman Street, St. Peter's, &c.	12,910	11,350	− 12·08	11,939	5·19
	Total	—	128,833	121,124	− 15·98	125,065	3·26
15	*Shoreditch*—						
	1. Holywell	Holywell and Moorfields					
	2. St. Leonard	St. Leonard, Shoreditch, part of					
	3. Hoxton, New Town	,,	34,766	43,930	26·36	52,966	20·57
	4. ,, Old ,,	,,					
	5. Haggerstone, west and east	,,					
	Total	—	34,766	43,930	26·36	52,966	20·57
16	*Bethnal Green*—						
	1. Hackney Road	Hackney Road					
	2. ,, Green	,, Green					
	3. ,, Church	,, Church	22,310	33,619	50·69	45,676	35·86
	4. ,, Town	,, Town					
	Total	—	22,310	33,619	50·69	45,676	35·86
17	*Whitechapel*—						
	1 { 1. Artillery	Old Artillery Ground					
	{ 1A. Spitalfields	Christchurch, Spitalfields					
	2. Mile End New Town	Christchurch, Spitalfields					
	3. Whitechapel, north	St. Mary's, Whitechapel					
	4. ,, Church	,,	57,202	62,672	9·56	68,932	9·99
	5. Goodman's Fields	,,					
	6. Aldgate	Holy Trinity, Minories					
	Total	—	57,202	62,672	9·56	68,932	9·99
18	*St. George-in-the-East*—						
	1. St. Mary	St. George, Middlesex, or St. George-in-the-East					
	2. St. Paul	Ditto	21,170	26,917	27·15	32,528	20·85
	3. St. John	Ditto					
	Total	—	21,170	26,917	27·15	32,528	20·85
19	*Stepney*—						
	1. Shadwell	St. John of Wapping, St. Paul, Shadwell	14,717	13,168	− 10·53	12,635	− 4·05
	2. Ratcliff	Ratcliff Hamlet	5,666	6,998	23·51	6,973	− 0·36
	3. Limehouse	St. Anne, Limehouse	4,678	7,386	57·89	9,805	32·75
	Total	—	25,061	27,552	9·94	29,413	6·76
20	*Mile End Old Town*—						
	1. Mile End Old Town, western	Mile End Old Town, part of...	9,848	14,465	46·88	22,876	58·15
	2. ,, eastern	,, ...					
	Total	—	9,848	14,465	46·88	22,876	58·15
21	*Poplar*—						
	1. Bow	Bow or St. Mary, Stratford-le-Bow	3,785	5,840	54·24	6,709	14·88
	2. Bromley	Bromley St. Leonards					
	3. Poplar	All Saints	4,493	7,708	71·56	12,223	58·58
	Total	—	8,278	13,548	63·66	18,932	39·74

Parishes, &c., from 1801 *to* 1881. (*Rates of Increase*)—*Contd.*

1831.	Per Cent.	1841.	Per Cent.	1851.	Per Cent	1861.	Per Cent.	1871.	Per Cent.	1881.	Per Cent.
19,871	*3·46*	20,494	*3·14*	23,824	*16·25*	20,990	*−11·90*	14,540	*−30·73*	11,174	*−23·15*
18,410	*0·22*	19,161	*3·91*	20,582	*7·42*	19,697	*− 4·30*	13,638	*−30·76*	7,193	*−47·26*
11,496	*−4·40*	12,682	*10·32*	12,946	*2·08*	11,750	*− 9·24*	7,562	*−35·64*	5,358	*−29·15*
16,721	*−7·17*	16,460	*−1·56*	15,844	*−3·74*	15,395	*− 2·84*	11,185	*−27 35*	8,396	*−24·94*
8,583	*−0·73*	8,839	*2·98*	9,204	*4·13*	7,762	*−15·67*	4,426	*−42·98*	2,890	*−34·70*
12,981	*−8·07*	12,427	*−4·27*	11,847	*−4·67*	9,020	*−23·85*	6,270	*30·49*	3,941	*−37·15*
12,250	*4·99*	11,954	*−2·42*	11,461	*−4·12*	8,570	*−25·22*	4,753	*−44·54*	3,154	*−33·64*
33,814	*−1·80*	33,220	*−1·76*	32,512	*−2·13*	25,352	*−22·02*	15,449	*−39·06*	9,985	*−35·37*
10,512	*−4·85*	10,597	*0·81*	10,594	nil	8,659	*−18·27*	5,764	*33·43*	3,681	*−36·14*
12,754	*6·83*	12,103	*−5·10*	12,826	*5·97*	11,544	*− 9·99*	7,845	*−32·04*	5,652	*−27·95*
123,608	*−1·17*	124,717	*0·90*	129,128	*3·54*	113,387	*−12·19*	75,983	*−32·99*	51,439	*−32·30*
69,564	*29·45*	16,722	...	17,245	*1·01*	17,313	*0·39*	12,430	*−28·20*	7,376	*−40·66*
		17,976	...	19,449	*8·19*	19,188	*− 1·34*	16,545	*−13·77*	14,967	*− 9·54*
		15,751	...	23,505	*49·25*	26,516	*12·81*	27,835	*4·97*	29,937	*7 55*
		13,994	...	17,431	*24·56*	25,777	*47·88*	26,933	*4·48*	28,036	*4·10*
		18,989	...	31,627	*66·55*	40,570	*28 28*	43,421	*7·03*	46,375	*6·57*
68,564	*29·45*	83,432	*21·68*	109,257	*30·96*	129,364	*18·40*	127,164	*− 1·70*	126,591	*− 0·45*
62,018	*35·78*	20,031	...	23,910	*19·37*	26,298	*9·99*	29,822	*13·40*	29,738	*− 0·28*
		16,766	...	23,555	*40·49*	31,739	*34·96*	42,433	*33·48*	47,932	*12·96*
		17,293	...	21,787	*25·99*	25,528	*17·17*	26,577	*4·11*	29,981	*12·81*
		19,998	...	20,941	*4·72*	21,486	*2·60*	21,272	*− 1·00*	19,310	*− 9·22*
62,018	*35·78*	74,088	*19·46*	90,193	*21·74*	105,101	*16·53*	120,104	*14·27*	126,961	*5·71*
64,141	*− 6·95*	6,221	...	6,769	...	6,557	...	6,651	...	Not given separately	...
		15,121	...	15,336	...	15,700	...	15,548	...		...
		21,342	...	22,105	*3·58*	22,257	*0·69*	22,499	*1·09*	22,585	*0·38*
		12,141	...	14,543	*19·78*	15,392	*5·84*	15,550	*1·03*	15,473	*− 0·50*
		12,296	...	12,530	*1·90*	12,122	*− 3·26*	11,597	*− 4·33*	10,001	*−13·96*
		6,990	...	7,818	*11·85*	8,062	*3·12*	7,322	*− 9·28*	7,489	*2·28*
		9,848	...	12,069	*22·55*	11,166	*− 7·48*	10,381	*− 7·03*	9,713	*− 6·44*
		9,148	...	10,694	*16·90*	9,971	*− 6·76*	9,224	*− 7·49*	6,102	*−33·85*
64,141	*− 6·95*	71,765	*11·89*	79,759	*11·14*	78,970	*− 0·99*	76,573	*− 3·03*	71,363	*− 6·80*
38,505	*18·38*	15,875	...	18,067	*13·81*	18,181	*0·63*	17,900	*− 1·54*	18,125	*1·26*
		17,724	...	20,319	*14·64*	21,015	*3·43*	21,350	*1·59*	20,622	*− 3·41*
		7,751	...	9,990	*28·89*	9,695	*− 2·95*	8,802	*− 9·21*	8,410	*− 4·46*
38,505	*18·38*	41,350	*7·39*	48,376	*16·99*	48,891	*1·06*	48,052	*− 1·72*	47,157	*− 1·86*
13,108	*3·74*	14,168	*8·09*	16,179	*14·19*	12,537	*−22·51*	11,640	*− 7·16*	10,395	*−10·70*
9,741	*39·69*	11,874	*21·90*	15,212	*28·11*	16,874	*10·93*	16,131	*− 4·40*	16,107	*− 0·15*
15,695	*60·07*	19,337	*23·21*	22,782	*17·81*	27,161	*19·22*	29,919	*10·15*	32,041	*7·09*
38,544	*31·04*	45,379	*17·73*	54,173	*19·38*	56,572	*4·43*	57,690	*1·98*	58,543	*1·48*
33,898	*48·18*	25,570	...	29,582	*15·69*	33,747	*14·08*	38,128	*12·98*	37,960	*− 0·44*
		19,738	...	27,020	*36·89*	39,317	*45·51*	55,024	*39·95*	67,653	*22·95*
33,898	*48·18*	45,308	*33·66*	56,602	*24·93*	73,064	*29·08*	93,152	*27·49*	105,613	*13·37*
8,217	*22·48*	10,780	*31·19*	18,778	*74·21*	35,667	*89·92*	67,765	*89·99*	101,433	*49·68*
16,849	*37·85*	20,342	*20·73*	28,384	*39·53*	43,529	*53·36*	48,611	*11·67*	55,077	*13·30*
25,066	*32·40*	31,122	*24·12*	47,162	*51·59*	79,196	*67·92*	116,376	*46·95*	156,510	*34·48*

TABLE B.—*Population of London in Sub-Districts,*

	Districts and Sub-Districts.	Parish, Township, or Place.	1801.	1811.	Per Cent.	1821.	Per Cent.
22	*St. Saviour, Southwark—*						
	1. Christ Church, Southwark	Christ Church	9,933	11,050	*11·24*	13,339	*20·71*
	2. St. Saviour's „	St. Saviour's	15,596	15,349	*– 1·58*	16,808	*9·51*
	3. Kent Road ... } St George's	St. George the Martyr, part of					
	4. Borough Road } Southwark	„	22,293	27,967	*25·45*	36,368	*30·04*
	5. London „	„					
	6. Trinity, Newington } New-	Holy Trinity					
	7. St. Peter, Walworth } ing	St. Peter ...	14,847	23,853	*60·66*	33,047	*38·54*
	8. St. Mary, Newington } ton	St. Mary					
	Total	—	62,669	78,219	*24·81*	99,562	*27·29*
23	*St. Olave, Southwark—*						
	1. St. Olave, Southwark	St. Olave, St. Thomas	9,924	9,383	*– 5·45*	10,227	*9·00*
	2. St. John, Horsleydown ...	St. John	8,892	8,370	*– 5·87*	9,163	*9·47*
	3. Leather Market ... } Ber-	St. Mary Magdalen, Bermond-					
	4. St. Mary Magdalen } mond-	sey, part of	17,169	19,530	*13·75*	25,235	*29·21*
	5. St. James, Bermond- } sey	Ditto					
	sey	St. James					
	6. Rotherhithe	St. Mary	10,296	12,114	*17·66*	12,523	*3·38*
	Total	—	46,281	49,397	*6·73*	57,148	*15·69*
24	*Lambeth—*						
	1. Waterloo Road, first	St. John					
	2. „ second	„					
	3. Lambeth Church, first ...	The Old Church, including Lambeth Palace					
	4. „ second	The Old Church, part of	27,985	41,644	*48·81*	57,638	*38·41*
	5. Kennington, first	St. Mark					
	6. „ second	„					
	7. Brixton	St. Matthew					
	8. Norwood	St. Luke					
	Total	—	27,985	41,644	*48·81*	57,638	*38·41*
25	*Wandsworth—*						
	1. Clapham	Clapham	3,864	5,083	*31·55*	7,151	*40·69*
	2. Battersea	Battersea (all ex-Penge Hamlet)	3,365	4,409	*31·03*	4,764	*8·05*
	3. Wandsworth	Wandsworth	4,445	5,644	*26·98*	6,702	*18·75*
	4. Putney	Putney	2,428	2,881	*18·66*	3,394	*17·81*
	5. Streatham	Tooting, Graveney, or Lower Tooting, Streatham	3,546	4,355	*22·81*	5,479	*25·81*
	Total	—	17,648	22,372	*26·77*	27,490	*22·88*
26	*Camberwell—*						
	1. Dulwich	Dulwich					
	2. Camberwell	St. Giles					
	3. Peckham	Peckham	7,059	11,309	*60·21*	17,876	*58·07*
	4. St. George	St. George					
	Total	—	7,059	11,309	*60·21*	17,876	*58·07*
27	*Greenwich—*						
	1. St. Paul, Deptford	—	11,349	12,748	*12·33*	14,481	*13·60*
	2. St. Nicholas, Deptford	—	6,933	7,085	*2·19*	6,377	*–10·56*
	3. Greenwich, west }	—	14,339	16,947	*18·19*	20,712	*22·22*
	4. „ east }						
	Total	—	32,621	36,780	*12·75*	41,530	*12·91*

Parishes, &c., from 1801 *to* 1881. (*Rates of Increase*)—*Contd.*

1831.	Per Cent.	1841.	Per Cent.	1851.	Per Cent.	1861.	Per Cent.	1871.	Per Cent	1881.	Per Cent.
13,705	*2·74*	14,616	*6 65*	16,022	*9·62*	17,069	*6·53*	14,573	*−14·62*	13,663	*− 6·24*
18,006	*7·13*	18,359	*1·96*	19,709	*7·35*	19,101	*− 3·09*	15,677	*17·93*	14,999	*− 4·33*
		15,671	...	18,126	*15·67*	19,652	*8·42*	20,421	*3·91*	21,318	*4·70*
39,769	*9·35*	14,794	...	15,862	*7·22*	16,668	*5·08*	16,695	*0·16*	15,953	*− 4·44*
		16,179	...	17,836	*10·24*	19,190	*7·59*	18,961	*− 1·19*	21,381	*12·43*
		46,644	*17·29*	51,824	*11·11*	55,510	*7·11*	56,077	*1·02*	58,652	*4·59*
		19,064	...	20,922	*9·75*	22,675	*8·38*	23,682	*4·44*	26,672	*12·63*
44,526	*34·73*	23,299	...	29,861	*28·17*	44,463	*48·90*	48,248	*8·51*	59,555	*23·44*
		12,243	...	14,033	*14·62*	15,082	*7·48*	16,792	*11·34*	21,623	*28·77*
		54,606	*22·64*	64,816	*18·70*	82,220	*26·85*	88,722	*7·91*	107,850	*21·56*
116,006	*16·52*	134,225	*15·70*	152,371	*13·51*	173,900	*14·13*	175,049	*0·66*	195,164	*11·49*
10,150	*− 0·75*	9,172	*− 9·64*	8,015	*−12·61*	7,663	*− 4·39*	4,373	*−42·93*	3,028	*−30·76*
9,871	*7·73*	10,665	*8·04*	11,360	*6·52*	11,393	*0·28*	10,500	*− 7·83*	8,928	*−14·97*
		12,775	...	15,295	*19·73*	16,696	*9·16*	16,787	*0·54*	16,300	*− 2·91*
29,741	*17·86*	9,721	...	13,934	*43·34*	16,505	*18·45*	15,709	*− 4·82*	15,669	*− 0·26*
		12,451	...	18,899	*51·79*	25,154	*33·10*	47,933	*90·56*	54,683	*14·08*
		34,947	*17·50*	48,128	*37·72*	58,355	*21·25*	80,429	*37·83*	86,652	*7·74*
12,875	*2·81*	13,917	*8·09*	17,805	*27·94*	24,502	*37·61*	27,096	*10·59*	36,024	*32·95*
62,637	*9·60*	68,701	*9·68*	85,308	*24·17*	101,913	*19·46*	122,398	*20·10*	134,632	*9·99*
		12,767	...	14,088	*10·35*	15,269	*8·38*	14,074	*− 7·83*	15,195	*7·97*
		17,319	...	18,348	*5·94*	18,640	*1·59*	18,465	*0·94*	16,351	*−11·45*
		18,446	...	18,409	*− 0·20*	19,839	*7·77*	19,492	*− 1·75*	19,876	*1·97*
87,856	*52·43*	22,931	...	26,784	*16·80*	29,542	*10·30*	35,833	*21·29*	39,859	*11·23*
		17,235	...	24,261	*40·77*	30,785	*26·89*	41,286	*34·11*	45,232	*9·56*
		14,054	...	18,848	*34·11*	20,440	*8·45*	31,221	*52·75*	35,332	*13·17*
		10,175	...	14,610	*43·59*	20,067	*37·35*	35,435	*76·58*	62,837	*77·33*
		2,961	...	3,977	*34·31*	7,462	*87·63*	12,536	*68·00*	19,017	*51·70*
87,856	*52·43*	115,888	*31·91*	139,325	*20·23*	162,044	*16·30*	208,342	*28·57*	253,699	*21·77*
9,958	*39·25*	12,106	*21·57*	16,290	*34·56*	20,894	*28·26*	27,347	*30·89*	36,380	*33·03*
5,311	*11·48*	6,617	*24·59*	10,560	*59·59*	19,600	*85·61*	54,016	*175·59*	107,262	*98·57*
6,879	*2·64*	7,614	*10·69*	9,611	*26·23*	13,346	*38·86*	19,783	*48·23*	28,004	*41·56*
3,811	*12·29*	4,684	*22·91*	5,280	*12·72*	6,481	*22·75*	9,439	*45.64*	13,235	*40·22*
7,131	*30·15*	8,834	*23·88*	9,023	*2·14*	10,082	*11·74*	14,475	*43·57*	25,553	*76·53*
33,090	*20·37*	39,855	*20·45*	50,764	*27·37*	70,403	*38·69*	125,060	*77·64*	210,434	*68·26*
		1,904	...	1,632	*−14·29*	1,723	*5·58*	4,041	*134·53*	5,590	*38·33*
28,231	*57·93*	14,176	...	17,742	*25·16*	21,297	*20·04*	31,254	*46·75*	59,104	*89·11*
		12,563	...	19,444	*24·77*	28,135	*44·70*	42,160	*49·85*	71,089	*68·62*
		11,225	...	15,849	*41·20*	20,333	*28·29*	33,851	*66·48*	50,810	*50·10*
28,231	*57·93*	39,868	*41·22*	54,667	*37·12*	71,488	*30·77*	111,306	*55·70*	186,593	*67·63*
15,314	*5·75*	18,664	*21·88*	24,899	*33·41*	37,834	*51·95*	53,714	*41·97*	76,752	*42·89*
6,036	*− 4·75*	6,953	*15·19*	7,071	*1·70*	8,139	*15·10*	6,474	*−20·46*	7,901	*22·04*
24,553	*18·54*	16,552	...	18,800	*13·58*	21,696	*15·40*	21,034	*− 3·05*	21,972	*4·46*
		13,043	...	16,228	*24·42*	18,306	*12·81*	19,378	*5·86*	24,608	*26·99*
		29,595	*20·53*	35,028	*18·36*	40,002	*14·20*	40,412	*1·03*	46,580	*15·27*
45,903	*10·53*	55,212	*20·28*	66,998	*21·35*	85,975	*28·32*	100,600	*17·01*	131,233	*30·45*

TABLE B.—*Population of London in Sub-Districts, Parishes, &c.,*

	Districts and Sub-Districts.	Parish, Township or Place.	1801.	1811.	PerCent.	1821.	PerCent.
28	*Lewisham* (*)—						
	2. Eltham	Eltham	1,702	1,882	*10·58*	1,977	*5·05*
	3. Lee (ex-Kidbrooke Liberty)	Lee Park and part of Lewisham	4,383*	7,137*	*62·83**	8,922	*25·01**
	4. Lewisham Village	Part of Lewisham					
	5. Sydenham	Sydenham Chapelry, part of Lewisham Parish					
	Total	—	6,085	9,019	*48·22*	10,899	*20·85*
29	*Woolwich*—						
	1. Charlton	1A Charlton next Woolwich	747	1,211	*62·11*	1,626	*34·27*
		1B Kidbrooke Liberty	58	60	*3·45*	73	*21·67*
			805	1,271	*57·89*	1,699	*33·67*
	2. Woolwich Dockyard	—	...	...	...	...	...
	3. „ Arsenal	—	...	...	...	...	...
			9,826	17,054	*73·56*	17,008	*– 0·27*
	4. Plumstead east	—	...	...	...	...	...
	5. „ west	—	...	...	...	...	...
			1,166	2,116	*81·58*	2,386	*12·76*
	Total	—	11,797	20,441	*73·27*	21,093	*3·19*
	Total of London	—	958,863	1,138,815	*18·78*	1,378,947	*21·07*

* In 1871 Plumstead and Charlton-next-Woolwich and Kidbrooke Liberty, part of Lee sub-district, were taken from Lewisham to form part of the new Woolwich district	4,441	7,197	...	8,995	...
Kidbrooke Liberty	58	60	...	73	...
	4,383	7,137	*62·83*	8,922	*25·01*

from 1801 *to* 1881. (*Rates of Increase*)—*Contd.*

1831.	Per Cent.	1841.	Per Cent.	1851.	Per Cent.	1861.	Per Cent.	1871.	Per Cent.	1881.	Per Cent.
2,129	*7·69*	2,310	*8·50*	2,568	*11·17*	3,009	*17·17*	4,539	*50·85*	5,827	*28·37*
		6,341*	...	8,018*	...	11,003*	...	16,440	...	21,559	...
10,767	*20·68*	5,380	...	6,097	...	7,372	...	11,513	...	19,865	...
		2,915	...	4,501	...	10,595	...	19,065	...	26,076	...
		14,636	*35 93*	18,616	*27·19*	28,970	*55·62*	47,018	*62·30*	67,500	*43·56*
12,896	*18·32*	16,946	*31·40*	21,184	*25·01*	31,979	*50·96*	51,557	*61·22*	73,327	*42·23*
2,327	*43·11*	2,655	*14·10*	4,818	*81·47*	8,472	*75·84*	7,699	*– 9·12*	8,764	*13·83*
458	*527·39*	597	*30·35*	460	*–22·95*	804	*74·78*	1,865	*131·96*	2,166	*16·14*
2,785	*63·92*	3,252	*16·77*	5,278	*62·30*	9,276	*75·75*	9,564	*3·11*	10,930	*14·28*
...	...	12,418	...	17,140	*38·03*	22,919	*33·72*	17,226	*–24·84*	17,617	*2·27*
...	...	13,367	...	15,227	*13·91*	18,776	*23·31*	18,331	*– 2·37*	19,048	*3·91*
17,661	*3·84*	25,785	*46·00*	32,367	*25·53*	41,695	*28·82*	35,557	*–14·72*	36,665	*3·12*
...	...	...	...	...	...	11,332	...	13,027	*14·96*	14,009	*7·54*
...	...	...	...	...	...	13,170	...	15,232	*15·66*	19,241	*26·32*
2,745	*15·05*	2,816	*2·59*	8,373	*197·34*	24,502	*192·63*	28,259	*15·33*	33,250	*17·66*
23,191	*9·95*	31,853	*37·35*	46,018	*44·47*	75,473	*64·01*	73,380	*– 2·77*	80,845	*10·17*
1,654,994	*20·02*	1,948,417	*17·73*	2,362,236	*21·24*	2,803,989	*18·70*	3,254,260	*16·06*	3,816,483	*17·28*
11,225	...	6,938*	...	8,478*	...	11,807*	...	...	...	...	...
458	...	597	...	460	...	804	...	...	...	...	...
10,767	*20·68*	6,341	...	8,018	...	11,003	...	...	...	...	...

TABLE B*.—SUMMARY. *Population of London in Registration Districts*

	Registration Districts.	1801.	1811.	Per Cent. of Increase or Decrease.	1821.	Per Cent. of Increase.	1831.	Per Cent. of Increase or Decrease.
1	Kensington	10,437	15,495	*48·46*	20,904	*34·91*	35,442	*69·55*
2	Fulham	10,028	13,296	*32·59*	15,301	*15·08*	17,539	*14·63*
3	Chelsea	11,604	18,262	*57·38*	26,860	*47·08*	32,371	*20·52*
4	St. George, Hanover Square	64,323	71,504	*11·16*	85,787	*19·97*	106,386	*24·88*
5	Westminster	46,099	46,381	*0·61*	49,034	*5·72*	52,653	*7·38*
6	Marylebone	63,982	75,624	*18·20*	96,040	*27·00*	122,206	*27·24*
7	Hampstead	4,343	5,483	*34·54*	7,263	*24·30*	8,588	*18·24*
8	Pancras	31,779	46,333	*45·80*	71,838	*55·05*	103,548	*44·14*
9	Islington	10,212	15,065	*47·52*	22,417	*48·80*	37,316	*66·46*
10	Hackney	14,192	18,920	*33·32*	25,164	*33·00*	34,527	*37·21*
11	St. Giles	36,502	48,536	*32·97*	51,793	*6·71*	52,907	*2·15*
12	Strand	50,854	51,334	*0·94*	55,152	*7·44*	50,385	*– 8·64*
13	Holborn	84,895	99,574	*17·29*	121,244	*21·76*	136,972	*12·97*
14	London City	128,833	121,124	*– 15·98*	125,065	*3·26*	123,608	*– 1·17*
15	Shoreditch	34,766	43,930	*26·36*	52,966	*20·57*	68,564	*29·45*
16	Bethnal Green	22,310	33,619	*50·69*	45,676	*35·86*	62,018	*35·78*
17	Whitechapel	57,202	62,672	*9·56*	68,932	*9·99*	64,141	*– 6·95*
18	St. George in the East	21,170	26,917	*7·15*	32,528	*20·85*	38,505	*18·38*
19	Stepney	25,061	27,552	*9·94*	29,413	*6·76*	38,544	*31·04*
20	Mile End Old Town	9,848	14,465	*46·88*	22,876	*58·15*	33,898	*48·18*
21	Poplar	8,278	13,548	*63·66*	18,932	*39·74*	25,066	*32·40*
22	St. Saviour, Southwark	62,669	78,219	*24·81*	99,562	*27·29*	116,006	*16·52*
23	St. Olave ,,	46,281	49,397	*6·73*	57,148	*15·69*	62,637	*9·60*
24	Lambeth	27,985	41,644	*48·81*	57,638	*38·41*	87,856	*52·43*
25	Wandsworth	17,648	22,372	*26·77*	27,490	*22·88*	33,090	*20·37*
26	Camberwell	7,059	11,309	*60·21*	17,876	*58·07*	28,231	*57·93*
27	Greenwich	32,621	36,780	*12·75*	41,530	*12·91*	45,903	*10·53*
28	Lewisham	6,085	9,019	*48·22*	10,899	*20·85*	12,896	*18·32*
29	Woolwich	11,797	20,441	*73·27*	21,093 526†	*3·19*	23,191	*9·95*
	Total of London	958,863	1,138,815	*18·78*	1,378,947	*21·07*	1,654,994	*20·02*

† Including militia.

TABLE C.—*London Population*

	Registration Districts and Sub-Districts.	Area in Acres, ex-Water, 1801 to 1881.	1801.		1811.		1821.	
			Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.
1	Kensington—							
	Paddington	1,232	1,881	1·53	4,609	3·74	6,476	5·26
	Kensington and Brompton	2,186	8,556	3·91	10,886	4·98	14,428	6·60
		3,418	10,437	3·05	15,495	4·53	20,904	6·12
2	Fulham—							
	Hammersmith, St. Peter and St. Paul	2,280	5,600	2·46	7,393	3·24	8.809	3·86
	Fulham	1,716	4,428	2·58	5,903	3·44	6,492	3·78
		3.996	10,028	2·51	13.296	3·33	15,301	3·83

from 1801 *to* 1881, *with the Rates of Increase.*

1841.	Per Cent. of Increase.	1851.	Per Cent. of Increase or Decrease.	1861.	Per Cent. of Increase or Decrease.	1871.	Per Cent. of Increase or Decrease.	1881.	Per Cent. of Increase or Decrease.
51,917	*46·48*	90,358	*74·04*	145,892	*61·46*	217,112	*48·82*	270,369	*24·53*
22,772	*29·84*	29,646	*30·18*	40,058	*35·12*	66,041	*64·86*	114,839	*73·89*
40,179	*24·12*	56,538	*40·71*	63,439	*12·21*	71,089	*12·06*	88,128	*23·97*
123,264	*15·86*	138,839	*12·64*	155,984	*12·34*	155,936	*– 0·03*	149,748	*– 3·97*
53,878	*2·33*	53,741	*– 1·26*	52,752	*– 1·84*	51,181	*– 2·98*	46,549	*– 9·05*
138,164	*13·05*	157,696	*14·42*	161,680	*2·52*	159,254	*– 1·50*	154,910	*– 2·73*
10,093	*17·52*	11,986	*18·75*	19,106	*59·40*	32,281	*68·96*	45,452	*40·80*
129,763	*25·31*	166,956	*28·67*	198,788	*19·06*	221,465	*11·41*	236,258	*6·68*
55,690	*49·24*	95,329	*71·18*	155,341	*62·95*	213,778	*37·62*	282,865	*32·32*
42,261	*22·40*	58,429	*38·26*	83,295	*42·56*	124,951	*50·01*	186,462	*49·23*
54,292	*2·62*	54,214	*– 0·14*	54,076	*– 0·26*	53,556	*– 0·96*	45,382	*– 15·26*
52,209	*3·62*	51,765	*– 0·85*	48,242	*– 6·81*	41,339	*– 14·31*	33,582	*– 18·76*
151,046	*10·28*	165,454	*9·53*	167,616	*1·31*	163,491	*– 2·46*	151,835	*– 7·13*
124,717	*0·90*	129,128	*3·54*	113,387	*– 12·19*	75,983	*– 32·99*	51,439	*– 32·30*
83,432	*21·68*	109,257	*30·96*	129,364	*18·40*	127,164	*– 1·70*	126,591	*– 0·45*
74,088	*19·46*	90,193	*21·74*	105,101	*16·53*	120,104	*14·27*	126,961	*5·71*
71,765	*11·89*	79,759	*11·14*	78,970	*– 0·99*	76,573	*– 3·03*	71,363	*– 6·80*
41,350	*7·39*	48,376	*16·99*	48,891	*1·06*	48,052	*– 1·72*	47,157	*– 1·86*
45,379	*17·73*	54,173	*19·38*	56,572	*4·43*	57,690	*1·98*	58,543	*1·48*
45,308	*33·66*	56,602	*24·93*	73,064	*29·08*	93,152	*27·49*	105,613	*13·37*
31,122	*24·12*	47,162	*51·59*	79,196	*67·92*	116,376	*46·95*	156,510	*34·48*
134,225	*15·70*	152,371	*13·51*	173,900	*14·13*	175,049	*0·66*	195,164	*11·49*
68,701	*9·68*	85,308	*24·17*	101,913	*19·46*	122,398	*20·10*	134,632	*9·99*
115,888	*31·91*	139,325	*20·23*	162,044	*16·30*	208,342	*28·57*	253,699	*21·77*
39,855	*20·45*	50,764	*27·37*	70,403	*38·69*	125,060	*77·64*	210,434	*68·26*
39,868	*41·22*	54,667	*37·12*	71,488	*30·77*	111,306	*55·71*	186,593	*67·63*
55,212	*20·28*	66,998	*21·35*	85,975	*28·32*	100,600	*17·01*	131,233	*30·45*
16,946	*31·40*	21,184	*25·01*	31,979	*50·96*	51,557	*61·22*	73,327	*42·23*
31,853	*37·35*	46,018	*44·47*	75,473	*64·01*	73,380	*– 2·77*	80,845	*10·17*
‡3,099									
1,948,417	*17·73*	2,362,236	*21·24*	2,803,989	*18·70*	3,254,260	*16·06*	3,816,483	*17·28*

‡ Including police on duty.

per Acre, 1801 *to* 1881.

1831.		1841.		1851.		1861.		1871.		1881.	
Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.
14,540	11·80	25,173	20·43	46,305	37·59	75,784	61·51	96,813	78·58	107,218	87·03
20,902	9·56	26,834	12·28	44,053	20·15	70,108	32·07	120,299	55·03	163,151	74·63
35,442	10·37	52,007	15·32	90,358	26·44	145,892	42·68	217,112	63·52	270,369	79·10
10,222	4·48	13,453	5·90	17,760	7·79	24,519	10·75	42,691	18·72	71,939	31·55
7,317	4·26	9,319	5·43	11,886	6·93	15,539	9·06	23,350	13·61	42,900	25·00
17,539	4·39	22,772	5·70	29,646	7·42	40,058	10·02	66,041	16·61	114,839	28·88

TABLE C.—*London Population*

	Registration Districts and Sub-Districts.	Area in Acres, ex-Water, 1801 to 1881.	1801.		1811.		1821.	
			Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.
3	Chelsea	793	11,604	14·63	18,262	23·03	26,860	33·87
4	St. George, Hanover Square—							
	Hanover Square, Mayfair, and Belgrave	1,098	38,440	35·01	41,687	37·39	46,384	42·25
	St. John, Westminster	211	8,375	39·69	10,615	50·31	16,835	79·79
	St. Margaret, Westminster	586	17,508	29·88	19,202	32·77	22,568	38·51
		1,895	64,323	33·94	71,504	37·73	85,787	45·27
5	Westminster—							
	Golden Square, Berwick Street, and St. James's Square	162	34,462	212·73	34,093	210·45	33,819	208·76
	St. Anne's, Soho	54	11,637	215·50	12,288	227·56	15,215	281·76
		216	46,099	213·42	46,381	214·73	49,034	227·01
6	Marylebone	1,499	63,982	42·68	75,624	50·45	96,040	64·07
7	Hampstead	2,248	4,343	1·93	5,843	2·60	7,263	3·23
8	Pancras	2,653	31,779	11·98	46,333	17·46	71,838	27·08
9	Islington	3,092	10,212	3·30	15,065	4·87	22,417	7·25
10	Hackney—							
	Stoke Newington	589	1,462	2·48	2,149	3·65	2,670	4·53
	Stamford Hill	3,245	12,730	3·92	16,771	5·17	22,494	6·93
		3,834	14,192	3·70	18,920	4·93	25,164	6·56
11	St. Giles—							
	St. George, Bloomsbury	122	7,738	63·43	13,864	113·64	16,110	132·05
	St. Giles	123	28,764	233·85	34,672	281·88	35,683	290·11
		245	36,502	148·99	48,536	198·11	51,793	211·40
12	Strand—							
	St. Martin-in-the-Fields	286	27,437	95·93	26,834	93·83	28,893	101·03*
	St. Mary-le-Strand and St. Clement Danes	117	23,417	200·15	24,500	209·40	26,259	224·43
		403	50,854	126·19	51,334	127·38	55,152	136·85*
13	Holborn—							
	St. George-the Martyr and St. Andrew	137	22,820	166·57	24,624	179·74	27,109	197·87
	Saffron Hill	60	11,798	196·63	11,868	197·80	14,154	235·90
	St. James's, Clerkenwell, &c.	380	23,396	61·57	30,537	80·36	39,105	102·91
	St. Luke, Old Street, City Road, Whitecross Street, Finsbury	235	26,881	114·39	32,545	138·49	40,876	173·94
		812	84,895	104·55	99,574	122·63	121,244	149·31
14	London, City—							
	St. Botolph	83	19,003	228·95	17,481	210·62	19,207	231·41
	Cripplegate	66	16,828	254·97	17,182	260·33	18,399	278·77
	St. Sepulchre	48	11,689	243·52	12,336	257·00	12,025	250·52
	St. Bride's	83	16,698	201·18	17,024	205·11	18,013	217·03*
	Castle Baynard	211	38,404	182·01	34,437	163·21*	34,434	163·21*
	Allhallows, Barking	82	13,301	162·21	11,314	137·97	11,048	134·73
	Broad Street	95	12,910	135·89	11,350	119·47	11,939	125·67
		668	128,833	192·86	121,124	181·32	125,065	187·23
15	Shoreditch	634	34,766	54·84	43,930	69·29	52,966	83·54
16	Bethnal Green	738	22,310	30·23	33,619	45·55	45,676	61·89
17	Whitechapel	372	57,202	153·77	62,672	168·47	68,932	185·30
18	St. George's-in-the-East	213	21,170	99·39	26,917	126·37	32,528	152·71
19	Stepney—							
	Shadwell	99	14,717	148·66	13,168	133·01	12,635	127·63
	Ratcliffe	108	5,666	52·46	6,998	64·80	6,973	64·57
	Limehouse	214	4,678	21·86	7,386	34·52	9,805	45·82
		421	25,061	59·53	27,552	65·44	29,413	69·87

per Acre, 1801 *to* 1881—*Contd.*

1831.		1841.		1851.		1861.		1871.		1881.	
Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.
32,371	40·82	40,179	50·67	56,538	71·30	63,439	80·00	71,089	89·65	88,128	111·13
58,209	53·01	66,552	60·61	73,230	66·69	87,771	79·94	89,677	81·67	89,573	81·58
22,648	103·34	26,223	124·28	34,295	162·54	37,483	177·64	38,478	182·36*	35,496	168·23
25,529	45·57	30,489	52·03	31,314	53·44*	30,730	52·44	27,781	47·41	24,679	42·11
106,386	56·14	123,264	65·04	138,839	73·27	155,984	82·31*	155,936	82·29	149,748	79·02
37,053	228·72	37,398	230·85*	36,406	224·73	35,326	218·06	33,619	207·52	29,941	184·82
15,600	228·89	16,480	305·18	17,335	321·02	17,426	322·70	17,562	325·22*	16,608	307·55
52,653	243·76	53,878	249·44*	53,741	248·80	52,752	244·22	51,181	236·95	46,549	215·51
122,206	81·53	138,164	92·17	157,696	105·20	161,680	107·86*	159,254	106·24	154,910	103·34
8,588	3·82	10,093	4·49	11,986	5·33	19,106	8·50	32,281	14·36	45,452	20·22
103,548	39·03	129,763	48·91	166,956	62·93	198,788	74·93	221,465	83·48	236,258	89·05*
37,316	12·07	55,690	18·01	95,329	30·83	155,341	50·24	213,778	69·14	282,865	91·49*
{ 3,480 31,047	{ 5·91 9·51	{ 4,490 37,771	{ 7·62 11·64	{ 4,840 53,589	{ 8·22 16·51	{ 6,608 76,687	{ 11·22 23·63	{ 9,841 115,110	{ 16·71 35·47	22,781 103,681	38·68 50·44
34,527	9·01	42,261	11·02	58,429	15·24	83,295	21·73	124,951	32·59	186,462	48·63
16,475	134·05	16,981	139·19	16,807	137·76	17,392	142·56	17,853	146·34*	16,681	136·73
36,432	296·20	37,311	303·34*	37,407	300·12*	36,684	298·24	55,703	290 27	28,701	233·34
52,907	215·95	54,292	221·60*	54,214	221·28*	54,076	220·72	53,556	218·60	45,382	185·23
23,970	83·81	25,091	87·73*	24,640	86·15	22,689	79·33	21,238	74·26	17,508	61·22
26,415	225·77	27,118	231·78	27,125	231·84*	25,553	218·40	20,101	171·80	16,074	137·39
50,385	125·03	52,209	129·55*	51,765	128·45	48,242	119·71	41,339	102·58	33,582	83·33
28,018	204·51	30,020	219·12	32,784	239·30	32,850	239·78	34,050	248·54*	29,377	214·43
14,678	244·64	14,441	240·69	13,837	230·62	12,012	200·20	9,066	151·10	6,533	108·88
47,634	125·35	56,756	109·36	64,778	170·47	65,681	172·85	65,380	172·05	69,076	181·78
46,642	198·48	49,829	212·04	54,055	230·02	57,073	242·86*	54,995	234·02	46,849	199·36
136,972	168·68	151,046	186·02	165,454	203·76	167,616	206·43*	163,491	201·34	151,835	187·00
19,871	239·41	20,494	246·92	23,824	287·94*	20,990	252·89	14,540	175·18	11,174	134 63
18,440	279·40	19,161	290·32	20,582	311·85*	19,697	298·44	13,638	206·64	7,193	108·99
11,496	239·50	12,682	264·21	12,946	269·71*	11,750	244·79	7,562	157·54	5,358	111·62
16,721	201·46	16,460	198·31	15,844	190·89	15,395	185·48	11,185	134·76	8,396	101·16
33,814	160·25	33,220	157·44	32,512	154·08	25,352	120·15	15,449	73·22	9,985	47·32
10,512	128·19	10,597	129·23*	10,594*	129·20*	8,659	105·60	5,764	70·29	3,681	44·89
12,754	134·25	12,103	127·40	12,826	135·01*	11,544	121·52	7,845	82·58	5,652	59·49
123,608	185·03	124,717	186·71	129,128	193·31*	113,387	169·75	75,983	113·75	51,439	77·01
68,564	108·15	83,432	131·60	109,257	172·33	129,364	204·04*	127,164	200·57	126,591	199·67
62,018	84·03	74,088	100·39	90,193	122·21	105,101	142·41	120,104	162·74	126,961	172·03*
64,141	172·42	71,765	192·92	79,759	214·41*	78,970	212·29	76,573	205·84	71,363	191·84
38,505	180·78	41,350	194·13	48,376	227·12*	48,891	229·54*	48,052	225·60	47,157	221·40
13,108	132·40	14,168	143·11	16,179	163·43*	12,537	126·64	11,640	117·58	10,395	105·00
9,741	90·19	11,874	109·94	15,212	140·85	16,874	156·24*	16,131	149·36	16,107	149·14
15,695	73·34	19,337	90·36	22,782	106·46	27,161	126·92	29,919	139·81	32,041	149·72*
38,544*	91·55	45,379	107·79	54,173	128·68	56,572	134·38	57,690	137·03	58,543	139·06*

TABLE C.—*London Population*

	Registration Districts and Sub-Districts.	Area in Acres, ex-Water, 1801 to 1881.	1801.		1811.		1821.	
			Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.
20	Mile End Old Town	673	9,848	14·63	14,465	21·49	22,876	33·99
21	Poplar—							
	Bow and Bromley	1,113	3,785	3·40	5,840	5·25	6,709	6·03
	Poplar	1,004	4,493	4·48	7,708	7·68	12,223	12·17
		2,117	8,278	3·91	13,548	6·40	18,932	8·94
22	St. Saviour's, Southwark—							
	Christchurch	77	9,933	129·00	11,050	143·51	13,339	173·23
	St. Saviour's	127	15,596	122·80	15,349	120·86	16,808	132·35
	Kent, Borough, and London Roads	284	22,293	78·50	27,967	98·48	36,368	128·06
	Holy Trinity, St. Peter, and St. Mary, Newington	631	14,847	23·53	23,853	37·80	33,047	52·37
		1,119	62,669	56·00	78,219	69·90	99,562	88·97
23	St. Olave—							
	St. Olave, Southwark	56	9,924	171·21	9,383	167·55	10,227	182·62
	St. John ,,	69	8,892	178·87	8,370	121·30	9,163	132·80
	Leather Market, St. Mary and St. James, Bermondsey	627	17,169	27·38	19,530	31·15	25,235	40·25
	Rotherhithe	579	10,296	17·78	12,114	20·92	12,523	21·63
		1,331	46,281	34·77	49,397	37·11	57,148	42·94
24	Lambeth	3,942	27,985	7·10	41,644	10·56	57,638	14·62
25	Wandsworth—							
	Clapham	1,137	3,864	3·40	5,083	4·47	7,151	6·29
	Battersea	2,170	3,365	1·55	4,409	2·03	4,764	2·20
	Wandsworth	2,405	4,445	1·85	5,644	2·35	6,702	2·79
	Putney	2,215	2,428	1·10	2,881	1·30	3,394	1·53
	Streatham	3,465	3,546	1·02	4,355	1·26	5,479	1·58
		11,392	17,648	1·55	22,372	1·96	27,490	2·41
26	Camberwell	4,450	7,059	1·59	11,309	2·54	17,876	4·02
27	Greenwich—							
	St. Paul, Deptford	1,575	11,349	7·21	12,748	8·09	14,481	9·19
	St. Nicholas, Deptford	108	6,933	64·19†	7,085	65·60	6,337	58·68
	Greenwich, west and east	1,734	14,339	8·27	16,947	10·00	20,712	11·94
		3,417	32,621	9·55	36,780	10·76	41,530	12·15
28	Lewisham—							
	Eltham	4,417	1,702	0·39	1,882	0·43	1,977	0·45
	Lee, Lewisham, and Sydenham	6,960	4,383	0·63	7,137	1·03	8,922	1·28
		11,377	6,085	0·53	9,019	0·79	10,899	0·96
29	Woolwich—							
	Charlton and Kidbrooke	1,979	805	0·41	1,271	0·64	1,699	0·86
	Woolwich Dockyard and Arsenal	1,113	9,826	8·83	17,054	15·32	17,008	15·28
	Plumstead, east and west	3,367	1,166	0·35	2,116	0·63	2,386	0·71
		6,459	11,797	1·83	20,441	3·16	21,093	3·27
	Total of London	74,427	958,863	12·88	1,138,815	15·30	1,378,947*	18·53

* Includes Militia, 526.

per Acre, 1801 *to* 1881—*Contd.*

1831.		1841.		1851.		1861.		1871.		1881.	
Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.	Population.	Number of Persons per Acre.
33,898	50·37	45,308	67·32	56,602	84·10	73,064	108·57	93,152	138·41	105,613	156·92
8,217	7·38	10,780	9·69	18,778	16·87	35,667	32·05	67,765	60·88	101,433	91·13
16,849	16·78	20,342	20·26	28,384	28·27	43,529	43·36	48,611	48·42	55,077	54·86
25,066	11·84	31,122	14·70	47,162	22·28	79,196	37·41	116,376	54·97	156,510	73·93
13,705	177·99	14,616	189·82	16,022	208·08	17,069	221·68	14,573	189·26	13,663	177·44
18,006	141·78	18,359	144·56	19,709	155·19	19,101	150·40	15,677	123·44	14,999	118·10
39,769	140·03	46,644	164·24	51,824	182·48	55,510	195·46	56,077	197·46	58,652	206·52
44,526	70·56	54,606	86·54	64,816	102·72	82,220	130·30	88,722	140·60	107,850	170·92
116,006	103·67	134,225	119·96	152,371	136·17	173,900	155·41	175,049	156·43	195,164	174·41
10,150	181·25	9,172	163·79	8,015	143·13	7,663	136·84	4,373	78.09	3,028	54·07
9,871	143·06	10,665	154·56	11,360	164·64	11,393	165·10*	10,500	152·17	8,928	129·39
29,741	47·43	34,947	55·74	48,128	76·76	58,355	93·07	80,429	128·28	86,652	138·20
12,875	22·24	13,917	24·04	17,805	30·75	24,502	42·32	27,096	46·80	36,024	62·22
62,637	47·06	68,701	51·62	85,308	64·09	101,913	76·57	122,398	91·96	134,632	101·15
87,856	22·29	115,888	29·40	139,325	35·35	162,044	41·11	208,342	52·85	253,699	64·36
9,958	8·76	12,106	10·65	16,290	14·33	20,894	18·38	27,347	24·05	36,380	32·74
5,311	2·45	6,617	3·05	10,560	4·87	19,600	9·03	54,016	24·89	107,262	49·43
6,879	2·86	7,614	3·17	9,611	4·00	13,346	5·55	19,783	8·23	28,004	11·64
3,811	1·72	4,684	2·11	5,280	2·38	6,481	2·93	9,439	4·26	13,235	5·98
7,131	2·06	8,834	2·55	9,023	2·60	10,082	2·91	14,475	4·17	25,553	7·37
33,090	2·90	39,855	3·50	50,764	4·46	70,403	6·18	125,060	10·98	210,434	18·47
28,231	6·34	39,868	8·96	54,667	12·28	71,488	16·06	111,306	25·01	186,593	41·93
15,314	9·72	18,664	11·85	24,899	15·81	37,834	24·02	53,714	34·10	76,752	48·73
6,036	55·89	6,953	64·38	7,071	65·47	8,139	75·36	6,474	59·49	7,901	73·16
24,553	14·16	29,595	17·07	35,028	20·20	40,002	33·07	40,412	23·31	46,580	26·86
45,903	13·43	55,212	16·16	66,998	19·61	85,975	25·16	100,600	29·44	131,233	38·41
2,129	0·48	2,310	0·52	2,568	0·58	3,009	0·68	4,539	1·03	5,827	1·32
10,767	1·55	14,636	2·10	18,616	2·67	28,970	4·16	47,018	6·76	67,500	9·70
12,896	1·13	16,946	1·49	21,184	1·86	31,979	2·81	51,557	4·53	73,327	6·45
2,785	1·41	3,252	1·64	5,278	2·67	9,276	4·69	9,654	4·83	10,930	5·52
17,661	15·87	25,785	23·17	32,367	29·08	41,695	37·46	35,557	31·95	36,665	32·94
2,745	0·82	2,816	0·84	8,373	2·49	24,502	7·28	28,259	8·39	33,250	9·88
23,191	3·59	31,853	4·93	46,018	7·12	75,473	11·69	73,380	11·36	80,845	12·52
1,654,994	22·24	1,948,417†	26·18	2,362,236	31·74	2,803,989	37·67	3,254,260	43·73	3,816,483	51·28

† Includes Police on duty, 3,090.

TABLE D.—*London. Houses per Acre, Population*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1841.				
			Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
1. Kensington	1. St. Mary, Paddington....	791	940	6,436	1·19	8·12	6·85
	2. St. John, ,, ...	441	2,539	18,737	5·76	42·49	7·38
	3. Kensington Town	1,493	2,393	17,369	1·60	11·63	7·26
	4. Brompton.....	693	1,405	9,465	2·03	13·66	6·74
	Total	3,418	7,277	52,007	2·13	15·32	7·15
2. Fulham	1. St. Peter's, Hammersmith.....	185	629	3,565	3·40	19·27	5·67
	2. St. Paul's, Hammersmith	2,095	1,585	9,888	0·76	4·72	6·24
	3. Fulham.....	1,716	1,471	9,319	0·86	5·43	6·34
	Total	3,996	3,685	22,772	0·92	5·70	6·18
3. Chelsea	1. Chelsea, south	304	1,936	14,467	6·37	117·59	7·47
	2. ,, north-west.....	209	1,965	12,638	9·40	60·47	6·43
	3. ,, ,, east	280	1,747	13,074	6·24	46·69	7·18
	Total	793	5,648	40,179	7·12	50·67	7·11
4. St. George's, Hanover Sq.	1. Hanover Square	418	2,190	21,398	5·24	51·19	9·77
	2. Mayfair.....	137	1,657	15,048	12·09	109·84	9·08
	3. Belgrave	543	3,783	30,106	6·97	55·44	7·96
	4. St. John, Westminster	211	3,073	26,223	14·56	124·28	8·53
	5. St. Margaret.....	586	3,366	30,489	5·74	52·03	9·06
	Total	1,895	14,069	123,264	7·42	65·04	8·29
5. Westminster	1. Golden Square.....	54	1,202	13,612	22·26	252·08	11·32
	2. Berwick Street.....	24	802	10,449	33·42	435·37	13·03
	3. St. James's Square	84	1,586	13,337	18·88	158·77	8·41
	4. St. Anne, Soho	54	1,404	16,480	26·00	305·18	11·74
	Total	216	4,994	53,878	23·12	249·44	10·79
6. Marylebone	1. All Souls	112	2,449	27,003	21·87	241·10	11·03
	2. Cavendish Square	112	1,793	15,192	16·01	135·64	8·47
	3. Rectory.....	116	2,209	26,714	19·04	230·29	12·09
	4. St. Mary's	108	2,294	21,988	21·24	203·59	9·58
	5. Christchurch	508	3,180	28,911	6·26	56·91	9·09
	6. St. John	543	2,244	18,356	4·13	33·80	8·18
	Total	1,499	14,169	138,164	9·45	92·17	9·75
7. Hampstead ...	1. Hampstead	2,248	1,411	10,093	0·63	4·49	7·15
8. Pancras	1. Regent's Park	410	2,892	26,488	7·05	64·61	9·16
	2. Tottenham Court	144	2,607	26,800	18·10	186·11	10·28
	3. Gray's Inn Lane	154	2,657	22,149	17·25	143·82	8·34
	4. Somers Town	183	3,243	28,916	17·72	157·98	8·91
	5. Camden ,, ...	165	1,807	15,018	10·95	91·02	8·31
	6. Kentish ,, ...	1,597	1,560	10,398	0·98	6·51	6·67
	Total	2,653	14,766	129,763	5·57	48·91	8·79

per Acre and per House, 1841 *to* 1881.

1851.					Registration Sub-Districts.	Registration Districts.
Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.		
2,278	17,252	2·88	21·81	7·51	1. St. Mary, Paddington	1. Kensington
3,825	29,053	8·67	65·88	7·60	2. St. John, ,,	
3,986	29,183	2·67	19·55	7·32	3. Kensington Town	
2,150	14,870	3·10	21·46	6·92	4. Brompton	
12,239	90,358	3·58	26·44	7·38	Total	
813	4,467	4·39	24·15	5·49	1. St. Peter's, Hammersmith	2. Fulham
2,302	13,293	1·10	6·35	5·77	2. St. Paul's, Hammersmith	
1,797	11,886	1·05	6·93	6·61	3. Fulham	
4,912	29,646	1·23	7·42	6·04	Total	
2,383	19,050	7·84	62·66	7·99	1. Chelsea, south	3. Chelsea
2,532	17,669	12·11	84·54	6·98	2. ,, north-west	
2,676	19,819	9·56	70·78	7·41	3. ,, ,, east	
7,591	56,538	9·57	71·30	7·45	Total	
2,148	20,216	5·14	48·36	9·41	1. Hanover Square	4. St. George's Hanover Sq.
1,611	12,980	11·76	94·74	8·06	2. Mayfair	
4,997	40,034	9·20	73·73	8·01	3. Belgrave	
3,505	34,295	16·60	162·54	9·79	4. St. John, Westminster	
3,139	31,314	5·36	53·44	9·98	5. St. Margaret	
15,398	138,839	8·13	73·27	9·02	Total	
1,177	14,139	21·80	261·83	12·01	1. Golden Square	5. Westminster
779	10,798	32·46	449·91*	13·86	2. Berwick Street	
1,443	11,469	17·18	136·54	7·98	3. St. James's Square	
1,354	17,335	25·07	321·02	12·80	4. St. Anne, Soho	
4,753	53,741	22·00	248·80	11·73	Total	
2,441	28,841	21·79	257·51	11·82	1. All Souls.....	6. Marylebone
1,718	14,687	15·34	131·14	8·55	2. Cavendish Square	
2,177	27,633	18·77	238·22	12·69	3. Rectory	
2,249	22,814	20·82	211·24	10·14	4. St. Mary's	
3,589	33,895	7·06	66·72	9·44	5. Christchurch	
3,652	29,826	6·73	54·93	8·17	6. St. John	
15,826	157,696	0·76	105·20	9·96	Total	
1,719	11,986	0·76	5·33	6·97	1. Hampstead	7. Hampstead
3,575	31,918	8·72	77·85	8·93	1. Regent's Park	8. Pancras
2,856	28,433	17·96	197·45	10·99	2. Tottenham Court	
2,946	26,523	19·13	172·23	9·00	3. Gray's Inn Lane	
3,731	35,641	20·39	194·76	9·55	4. Somers Town	
2,498	21,115	15·14	127·97	8·45	5. Camden ,,	
3,248	23,326	2·03	14·61	7·18	6. Kentish ,,	
18,584	166,956	7·00	62·93	8·98	Total	

TABLE D.—*London. Houses per Acre, Population*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1841. Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
9. Islington	1. Islington, west	1,222	3,899	25,396	3·19	20·78	6·51
	2. ,, east	1,870	4,609	30,294	2·46	16·20	6·51
	Total	3,092	8,508	55,690	2·75	18·01	6·55
10. Hackney	1. Stoke Newington	589	716	4,490	1·22	7·62	6·27
	2. Stamford Hill	600	880	5,140	1·47	8·57	5·84
	3. West Hackney	466	1,994	11,108	4·28	23·84	5·57
	4. Hackney	1,760	2,394	14,634	1·36	8·31	6·11
	5. South Hackney	419	1,208	6,889	2·88	16·44	5·70
	Total	3,834	2,192	42,261	1·88	11·02	5·88
11. St. Giles	1. St. George, Bloomsbury	122	2,083	16,981	17·07	139·19	8·15
	2. St. Giles, south	64	1,447	19,634	22·61	306·78	13·57
	3. ,, north	59	1,429	17,677	24·22	299·61	12·37
	Total	245	4,959	54,292	20·24	221·60	10·95
12. Strand	1. Charing Cross.....	248	1,365	13,299	5·50	53·63	9·74
	1. Long Acre	38	1,074	11,792	28·26	310·31	10·98
	2. St. Mary-le-Strand.....	56	1,179	11,732	21·05	209·50	9·95
	3. St. Clement Danes.....	61	1,744	15,386	28·59	252·26	8·82
	Total	403	5,362	52,209	13·30	129·55	9·74
13. Holborn	1. St. George the Martyr	104	2,020	17,407	19·42	167·37	8·62
	2. St. Andrew, eastern	33	1,129	12,613	34·21	382·21	11·17
	3. Saffron Hill	60	1,454	14,441	24·23	240·69	9·93
(Formerly Clerkenwell district)	4. St. James	73	2,254	19,417	30·88	265·99	8·60
	5. Amwell	83	1,457	13,490	17·55	162·53	9·26
	6. Pentonville	133	1,378	9,522	10·36	71·59	6·91
	7. Goswell Road	91	1,864	14,327	20·48	157·44	7·69
(Formerly St. Luke's district)	8. Old Street	51	1,674	9,841	32·82	192·96	5·88
	9. City Road	72	1,478	14,711	20·53	204·32	9·95
	10. Whitecross Street	33	1,597	12,963	48·39	392·83	8·12
	11. Finsbury.	79	1,636	12,314	20·71	155·87	7·53
	Total	812	17,941	151,046	22·09	186·02	8·42
14. London City....	1. St. Botolph	83	2,492	20,494	30·02	246·91	8·22
	2. Cripplegate	66	2,304	19,161	34·91	290·32	8·32
	3. St. Sepulchre	48	1,130	12,682	23·54	264·21	11·22
	4. St. Bride's	83	1,880	16,460	22·65	198·31	8·76
	5. Castle Baynard—						
	Castle Baynard	55	1,007	8,839	23·05	160·71	8·78
	Christchurch	73	1,774	12,427	23·89	170·23	7·13
	Queenhithe	83	1,726	11,954	20·80	144·03	6·93
		211	4,477	33,220	21·22	157·44	7·42

per Acre and per House, 1841 *to* 1881—*Contd.*

1851.					Registration Sub-Districts.	Registration Districts.
Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.		
6,607	47,881	5·41	39·18	7·25	1. Islington, west	9. Islington
6,921	47,448	3·70	25·37	6·86	2. „ east	
13,528	95,329	4·38	30·83	7·05	Total	
791	4,840	1·34	8·22	6·12	1. Stoke Newington	10. Hackney
940	5,549	1·57	9·25	5·90	2. Stamford Hill	
3,273	18,732	7·02	40·20	5·72	3. West Hackney	
3,480	20,850	1·98	11·85	5·99	4. Hackney	
1,334	8,458	3·18	20·19	6·34	5. South Hackney	
9,818	58,429	2·56	15·24	5·95	Total	
1,998	16,807	16·38	137·76	8·41	1. St. George, Bloomsbury	11. St. Giles
1,399	19,951	21·86	311·73	14·26	2. St. Giles, south	
1,303	17,456	22·08	295·86	13·40	3. „ north	
4,700	54,214	19·18	221·28	11·54	Total	
1,276	12,587	5·15	50·75	9·86	1. Charing Cross	12. Strand
1,031	12,053	27·13	317·18	11·69	1. Long Acre	
1,086	11,615	19·39	207·41	10·70	2. St. Mary-le-Strand	
1,522	15,510	24·95	254·26	10·19	3. St. Clement Danes	
4,915	51,765	12·20	128·45	10·53	Total	
1,910	18,813	18·37	180·89	9·85	1. St. George the Martyr	13. Holborn
1,076	13,971	32·61	423·36*	12·98	2. St. Andrew, eastern	
1,325	13,837	22·08	230·62	10·44	3. Saffron Hill	
2,234	21,259	30·60	294·92	9·64	4. St. James	
1,616	15,720	19·47	189·40	9·73	5. Amwell	(Formerly Clerkenwell district)
1,503	11,904	11·30	89·50	7·92	6. Pentonville	
1,871	15,625	20·56	171·70	8·35	7. Goswell Road	
1,321	10,617	25·90	208·18	8·04	8. Old Street	
1,874	16,840	26·03	233·89	8·99	9. City Road	(Formerly St. Luke's district)
1,574	13,657	47·70	413·85	8·68	10. Whitecross Street	
1,580	12,941	20·00	163·81	8·19	11. Finsbury	
17,884	165,454	22·02	203·76	9·25	Total	
2,473	23,824	29·80	287·04	9·63	1. St. Botolph	14. London City
2,266	20,582	34·33	311·85	9·08	2. Cripplegate	
1,059	12,946	22·06	269·71	12·22	3. St. Sepulchre	
1,598	15,844	19·25	190·89	9·91	4. St. Bride's	
					5. Castle Baynard—	
975	9,204	17·73	167·34	9·44	Castle Baynard	
1,512	11,847	20·71	162·29	7·84	Christchurch	
1,508	11,461	18·17	138·08	7·60	Queenhithe	
3,995	32,512	18·93	154·08	8·14		

TABLE D.—*London. Houses per Acre, Population*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1841. Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
	6. Allhallows, Barking	82	1,619	10,597	19·74	129·23	6·55
	7. Broad Street	95	1,825	12,103	19·21	127·40	6·63
	Total	668	15,727	124,717	23·54	186·71	7·93
15. Shoreditch	1. Holywell	67	2,146	16,722	32·03	249·58	7·79
	2. St. Leonards	74	2,857	17,976	38·61	242·92	6·29
	3. Hoxton New Town	127	2,339	15,751	18·42	124·02	6·73
	4. „ Old Town	115	2,143	13,994	18·63	121·69	6·53
	5. Haggerstone, west	128	3,157	18,989	12·58	75·65	6·01
	„ east	123					
	Total	634	12,642	83,432	19·94	131·60	6·60
16. Bethnal Green	1. Hackney Road.....	140	3,280	20,031	23·43	143·08	6·11
	2. Green	374	2,780	16,766	7·43	44·83	6·03
	3. Church	131	3,081	17,293	23·52	132·01	5·61
	4. Town.....	93	2,641	19,998	28·40	215·03	7·57
	Total	738	11,782	74,088	15·96	100·39	6·29
17. Whitechapel	1. Artillery	25	773	6,221	30·92	248·84	8·05
	Spitalfields	52	1,728	15,121	33·23	290·79	8·75
		77	2,501	21,342	32·48	277·17	8·53
	2. Mile End New Town	58	1,515	12,141	26·12	209·33	8·01
	3. Whitechapel, north.....	59	1,575	12,296	26·70	208·41	7·81
	4. „ Church	46	926	6,990	20·13	151·96	7·55
	5. Goodman's Fields	51	1,238	9,848	19·28	193·10	7·95
	6. Aldgate.....	81	1,079	9,148	13·32	112·94	8·48
	Total	372	8,834	71,765	23·75	192·92	8·12
18. St. George-in-the-East	1. St. Mary	62	2,385	15,875	38·47	256·05	6·66
	2. St. Paul	84	2,641	17,724	31·44	211·00	6·71
	3. St. John	67	959	7,751	14·31	115·69	6·18
	Total	213	5,988	41,350	28·10	194·13	6·91
19. Stepney	1. Shadwell	99	2,006	14,168	20·26	143·11	7·06
	2. Ratcliffe	108	1,819	11,874	16·84	109·94	6·53
	3. Limehouse	214	2,834	19,337	13·24	90·36	6·82
	Total	421	6,659	45,379	15·82	107·79	6·81
20. Mile End Old Town	1. Mile End Old Town, upper.....	189	4,159	25,570	22·01	135·29	6·15
	2. Mile End Old Town, lower	484	3,546	19,738	7·33	40·78	5·57
	Total	673	7,705	45,308	11·45	67·32	5·88

per Acre and per House, 1841 *to* 1881—*Contd.*

1851.					Registration Sub-Districts.	Registration Districts.
Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.		
1,544	10,594	18·83	129·20	6·86	6. Allhallows, Barking	
1,758	12,826	18·51	135·01	7·30	7. Broad Street	
14,693	129,128	22·00	193·31	8·79	Total	
2,201	17,245	32·85	257·37	7·84	1. Holywell	15. Shoreditch
2,866	19,449	38·73	262·83	6·79	2. St. Leonards	
3,132	23,505	24·66	185·08	7·50	3. Hoxton New Town	
2,386	17,431	20·75	151·57	7·31	4. ,, Old Town	
2,923	20,276	22·84	158·41	6·94	5. Haggerstone, west	
1,829	11,351	14·87	92·28	6·21	,, east	
15,337	109,257	24·19	172·33	7·12	Total	
3,608	23,910	25·77	170·79	6·62	1. Hackney Road	16. Bethnal Green
3,503	23,555	9·37	62·98	6·72	2. Green	
3,497	21,787	26·69	166·31	6·23	3. Church	
2,690	20,941	28·92	225·17	7·78	4. Town	
13,298	90,193	18·02	122·21	6·78	Total	
762	6,769	30·48	270·76	8·88	1. Artillery	17. Whitechapel
1,548	15,336	29·77	294·92	9·91	Spitalfields	
2,310	22,105	30·00	287·08	9·57		
1,653	14,543	28·50	250·74	8·80	2. Mile End New Town	
1,494	12,530	25·32	212·38	8·39	3. Whitechapel, north	
967	7,818	21·02	169·96	8·08	4. ,, Church	
1,382	12,069	27·10	236·65	8·73	5. Goodman's Fields	
1,006	10,694	12·42	132·03	10·63	6. Aldgate	
8,812	79,759	23·69	214·41	9·05	Total	
2,411	18,067	38·89	291·40	7·49	1. St. Mary	18. St. George-in-the-East
2,750	20,319	32·74	241·89	7·39	2. St. Paul	
985	9,991	14·70	149·10	10·14	3. St. John	
6,146	48,376	28·85	227·12	7·87	Total	
2,047	16,179	20·68	163·43	7·90	1. Shadwell	19. Stepney
2,076	15,212	19·22	140·85	7·33	2. Ratcliffe	
3,269	22,782	15·28	106·46	6·97	3. Limehouse	
7,392	54,173	17·56	128·68	7·33	Total	
4,500	29,582	23·81	156·52	6·57	1. Mile End Old Town, upper	20. Mile End Old Town
4,367	27,020	9·02	55·83	6·19	2. Mile End Old Town, lower	
8,867	56,602	13·18	84·10	6·38	Total	

TABLE D.—*London. Houses per Acre, Population*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1841.				
			Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
21. Poplar	1. Bow	526	—	—	—	—	—
	2. Bromley	587	—	—	—	—	—
		1,113	1,931	10,780	1·72	9·69	5·58
	3. Poplar	1,004	3,135	20,342	3·12	20·26	6·49
	Total	2,117	5,066	31,122	2·39	14·70	6·14
22. St. Saviour's, Southwark	1. Christchurch	77	1,950	14,616	25·32	189·82	7·50
	2. St. Saviour's	127	2,709	18,359	21·33	144·56	6·78
	3. Kent Road	103	2,347	15,671	22·79	152·15	6·68
	4. Borough Road	64	2,084	14,794	32·57	231·16	7·10
	5. London ,,	117	2,232	16,179	19·08	138·28	7·25
	6. Trinity, Newington	146	3,122	19,064	21·38	130·58	6·11
	7. St. Peter's, Walbrook	318	4,162	23,299	13·09	73·27	5·60
	8. St. Mary's	167	2,086	12,243	12·49	73·31	5·87
	Total	1,119	20,692	134,225	18·49	119·96	6·49
23. St. Olave, Southwark	1. St. Olave, Southwark	56	1,024	9,172	18·29	163·79	8·96
	2. St. John, Horsleydown	69	1,499	10,665	21·72	154·56	7·11
	3. Leather Market	93	2,074	12,775	22·30	137·37	6·16
	4. St. Mary Magdalen	142	1,477	9,721	10·40	68·46	6·58
	5. St. James, Bermondsey	392	2,123	12,451	5·42	31·76	5·86
	6. Rotherhithe	579	2,420	13,917	4·18	55·74	5·75
	Total	1,331	10,617	68,701	7·98	51·62	6·47
24. Lambeth	1. Waterloo Road, 1st	67	1,713	12,767	25·57	190·55	7·45
	2. ,, 2nd	100	2,269	17,319	22·69	173·19	7·63
	3. Lambeth Church, 1st	162	2,710	18,446	16·73	113·86	6·81
	4. ,, 2nd	186	3,579	22,931	19·24	123·28	6·41
	5. Kennington, 1st	490	3,062	17,235	6·25	35·17	5·63
	6. ,, 2nd	498	2,424	14,054	4·87	28·22	5·80
	7. Brixton	1,430	1,622	10,175	1·13	7·12	6·27
	8. Norwood	1,009	412	2,961	0·41	2·93	7·19
	Total	3,942	17,791	115,888	4·51	29·40	6·51
25. Wandsworth	1. Clapham	1,137	2,006	12,106	1·76	10·65	6·03
	2. Battersea	2,170	1,090	6,617	0·50	3·05	6·07
	3. Wandsworth	2,405	1,315	7,614	0·55	3·17	5·79
	4. Putney	2,215	809	4,684	0·37	2·11	5·79
	5. Streatham	3,465	1,239	8,834	0·36	2·55	7·13
	Total	11,392	6,459	39,855	0·57	3·50	6·17
26. Camberwell	1. Dulwich	1,450	256	1,904	0·18	1·31	7·44
	2. Camberwell	1,378	2,320	14,176	1·68	10·29	6·11
	3. Peckham	1,175	2,148	12,536	1·83	10·69	5·85
	4. St. George	447	2,119	11,225	4·74	25·11	5·30
	Total	4,450	6,843	39,868	1·54	8·96	5·83

per Acre and per House, 1841 *to* 1881—*Contd.*

1851.					Registration Sub-Districts.	Registration Districts.
Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.		
—	—	—	—	—	1. Bow	21. Poplar
—	—	—	—	—	2. Bromley	
2,921	18,778	2·62	16·87	6·43		
3,910	28,384	3·89	28·27	7·26	3. Poplar	
6,831	47,162	3·23	22·27	6·90	Total	
1,887	16,022	24·51	208·08	8·49	1. Christchurch	22. St. Saviour's, Southwark
2,713	19,709	21·36	155·19	7·26	2. St. Saviour's	
2,558	18,126	24·83	175·98	8·92	3. Kent Road	
2,069	15,862	32·33	247·84	7·67	4. Borough Road	
2,365	17,836	20·21	152·44	7·54	5. London „	
3,224	20,922	22·08	143·30	6·49	6. Trinity, Newington	
4,925	29,861	15·49	93·93	6·06	7. St. Peter's, Walbrook	
2,309	14,033	13·83	84·03	6·08	8. St. Mary's	
22,050	152,371	19·71	136·17	6·91	Total	
880	8,015	15·71	143·13	9·61	1. St. Olave, Southwark	23. St. Olave, Southwark
1,480	11,360	21·45	164·64	7·68	2. St. John, Horsleydown	
2,279	15,295	24·51	164·46	6·71	3. Leather Market	
1,865	13,934	13·13	98·13	7·47	4. St. Mary Magdalen	
2,863	18,899	7·30	48·21	6·60	5. St. James, Bermondsey	
2,792	17,805	4·82	30·75	6·38	6. Rotherhithe	
12,159	85,308	9·14	64·09	7·02	Total	
1,729	14,088	25·81	210·27	8·15	1. Waterloo Road, 1st	24. Lambeth
2,191	18,348	21·91	183·48	8·37	2. „ 2nd	
2,451	18,409	15·13	113·64	7·51	3. Lambeth Church, 1st	
3,849	26,784	20·69	144·00	6·96	4. „ 2nd	
3,977	24,261	8·12	49·51	6·10	5. Kennington, 1st	
3,288	18,848	6·60	37·85	5·73	6. „ 2nd	
2,362	14,610	1·65	10·22	6·19	7. Brixton	
600	3,977	0·59	3·94	6·63	8. Norwood	
20,447	139,325	5·19	35·35	6·81	Total	
2,657	16,290	2·34	14·33	6·13	1. Clapham	25. Wandsworth
1,760	10,560	0·81	4·87	6·00	2. Battersea	
1,522	9,611	0·63	4·00	6·31	3. Wandsworth	
918	5,280	0·41	2·38	5·75	4. Putney	
1,419	9,023	0·41	2·60	6·36	5. Streatham	
8,276	50,764	0·73	4·46	6·13	Total	
259	1,632	0·18	1·13	6·30	1. Dulwich	26. Camberwell
2,851	17,742	2·07	12·88	6·22	2. Camberwell	
3,457	19,444	2·94	16·97	5·77	3. Peckham	
2,845	15,849	6·36	35·46	5·57	4. St. George	
9,412	54,667	2·12	12·28	5·81	Total	

TABLE D.—*London. Houses per Acre, Population*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1841. Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
27. Greenwich	1. St. Paul, Deptford	1,575	3,371	18,664	2·14	11·85	5·54
	2. St. Nicholas, Deptford...	108	1,095	6,953	10·14	64·38	6·35
	3. Greenwich, west	307	2,924	16,552	9·52	53·92	5·66
	4. „ east	1,427	1,571	13,043	1·10	9·14	8·30
	Total	3,417	8,961	55,212	2·62	16·16	6·16
28. Lewisham	1. Eltham	4,417	411	2,310	0·09	0·52	5·62
	2. Lee (ex-Kidbrooke)	1,234	—	—	—	—	—
	3. Lewisham (part of)....	366	—	—	—	—	—
		1,600	1,048	6,341	0·66	3·96	6·05
	4. Lewisham Village	3,744	1,472	8,295	0·27	1·55	5·64
	5. Sydenham.....	1,616					
		6,963	2,520	14,636	0·36	2·10	5·81
	Total	11,377	2,931	16,946	0·26	1·49	5·78
29. Woolwich	Charlton	1,231	441	2,655	0·36	2·16	6·02
	Kidbrooke Liberty.....	748	75	597	0·10	0·80	7·96
		1,979	516	3,252	0·26	1·64	6·30
	Woolwich Dockyard	399	1,235	12,418	3·10	31·12	10·05
	„ Arsenal	714	1,799	13,367	2·52	18·72	7·43
	Plumstead, east	349	—	—	—	—	—
	„ west	3,018	—	—	—	—	—
		3,367	519	2,816	0·15	0·84	5·43
	Total	6,459	4,069	31,853	0·63	4·93	7·83
	Total of London	74,427	262,744	1,948,417	3·37	26·18	7·42

per Acre and per House, 1841 *to* 1881—*Contd.*

1851.					Registration Sub-Districts.	Registration Districts.
Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.		
4,177	24,899	2·65	15·81	5·96	1. St. Paul, Deptford	27. Greenwich
1,122	7,071	10·39	65·47	6·30	2. St. Nicholas, Deptford	
3,300	18,800	10·75	61·24	5·70	3. Greenwich, west	
2,064	16,228	1·45	11·37	7·86	4. ,, east	
10,663	66,998	3·12	19·61	6·28	Total	
472	2,568	0·11	0·58	5·44	1. Eltham	28. Lewisham
—	—	—	—	—	2. Lee (ex-Kidbrooke)	
—	—	—	—	—	3. Lewisham (part of)	
1,338	8,018	0·84	5·01	5·99		
1,088	6,097	0·29	1·63	5·60	4. Lewisham Village	
801	4,501	0·50	2·79	5·62	5. Sydenham	
3,227	18,616	0·46	2·67	5·77		
3,699	21,184	0·33	1·86	5·73	Total	
775	4,818	0·63	3·91	6·22	Charlton	29. Woolwich
77	460	0·10	0·61	5·97	Kidbrooke Liberty	
852	5,278	0·43	2·67	6·19		
1,732	17,140	4·34	42·96	9·90	Woolwich Dockyard	
1,988	15,227	2·78	21·33	7·66	,, Arsenal	
—	—	—	—	—	Plumstead, east	
—	—	—	—	—	,, west	
1,376	8,373	0·41	2·49	6·08		
5,948	46,018	0·92	7·12	7·74	Total	
305,933	2,362,236	4·11	31·74	7·72	Total of London	

TABLE D.—*London. Houses per Acre, Population*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1861. Number of Houses.	1861. Population.	1861. Houses per Acre.	1861. Population per Acre.	1861. Population per House.
1. Kensington ...	1. St. Mary, Paddington...	791	4,826	39,015	6·10	49·32	8·08
	2. St. John „ ...	441	4,861	36,769	11·02	83·44	7·57
	3. Kensington Town	1,493	6,909	51,910	4·63	34·77	7·51
	4. Brompton	693	2,572	18,198	3·71	26·26	7·08
	Total	3,418	19,168	145,892	5·61	42·68	7·61
2. Fulham	1. St. Peter's, Hammersmith	185	1,000	5,415	5·41	29·27	5·42
	2. St. Paul's, Hammersmith	2,095	3,164	19,104	1·51	9·12	6·04
	3. Fulham	1,716	2,481	15,539	1·45	9·06	6·26
	Total	3,996	6,645	40,058	1·66	10·02	6·03
3. Chelsea	1. Chelsea, south	304	2,662	21,654	8·76	71·23	8·13
	2. „ north-west.....	209	2,734	19,899	13·08	95·21	7·28
	3. „ north-east	280	2,918	21,886	10·42	78·16	7·50
	Total	793	8,314	63,439	10·48	80·00	7·63
4. St. George's, Hanover Sq.	1. Hanover Square	418	2,156	19,773	5·16	47·30	9·17
	2. Mayfair	137	1,668	12,885	12·18	94·05	7·72
	3. Belgrave	543	6,613	55,113	12·18	101·50	8·33
	4. St. John, Westminster	211	3,723	37.483	17·64	177·64	10·07
	5. St. Margaret	586	3,075	30,730	5·25	52·44	9·99
	Total	1,895	17,235	155,984	9·09	82·31	9·05
5. Westminster	1. Golden Square.....	54	1,181	13,966	21·87	258·63	11·83
	2. Berwick Street.....	24	768	10,607	32·00	441·96	13·81
	3. St. James's Square	84	1.384	10,753	16·48	128·01	7·77
	4. St. Anne's, Soho	54	1,370	17,426	25·37	322·70	12·72
	Total	216	4,703	52,752	21·77	244·22	11·22
6. Marylebone	1. All Souls	112	2,417	29,952	21·58	267·43	12·39
	2. Cavendish Square	112	1,764	15,090	15·75	134·73	8·55
	3. Rectory	116	2,143	26,692	18·47	230·10	12·46
	4. St. Mary's	108	2,272	22,493	21·04	208·27	9·90
	5. Christchurch	508	3,600	34,913	7·09	68·73	9·69
	6. St. John	543	4,161	32,540	7·66	59·93	7·82
	Total	1,499	16,357	161,680	10·91	107·86	9·88
7. Hampstead	1. Hampstead	2,248	2,653	19,106	1·18	8·50	7·20
8. Pancras	1. Regent's Park	410	3,925	34,927	9·57	85·19	8·90
	2. Tottenham Court	144	2,603	29,371	18·08	203.97	11·28
	3. Gray's Inn Lane	154	2,887	27,808	18·75	180·57	9·63
	4. Somers Town	183	3,907	38,099	21·35	213·65	10·00
	5. Camden „	165	2,550	23,266	15·45	141·01	9·12
	6. Kentish „	1,597	5,980	44,317	3·74	27·75	7·41
	Total	2,653	21,852	198,788	8·24	74·93	9·10

per Acre and per House, 1841 *to* 1881—*Contd.*

1871.						
Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.	Registration Sub-Districts.	Registration Districts.
6,760	58,728	8·55	74·25	8·69	1. St. Mary, Paddington	1. Kensington
5,087	38,085	11·54	86·36	7·49	2. St. John ,,	
11,680	91,645	7·82	61·38	7·85	3. Kensington Town	
4,055	28,654	5·85	41·35	7·07	4. Brompton	
27,582	217,112	8·07	63·52	7·87	Total	
1,141	6,662	6·17	36·01	5·84	1. St. Peter's, Hammersmith	2. Fulham
5,578	36,029	2·66	17·20	6·46	2. St. Paul's, Hammersmith	
3,469	23,350	2·02	13·61	6·73	3. Fulham	
10,188	66,041	2·55	16·53	6·48	Total	
2,988	26,420	9·83	86·91	8·84	1. Chelsea, south	3. Chelsea
3,181	23,277	15·22	111·37	7·32	2. ,, north-west	
2,817	21,392	10·07	76·40	7·59	3. ,, north-east	
8,986	71,089	11·33	89·65	7·91	Total	
2,043	18,698	4·89	44·73	9·15	1. Hanover Square	4. St. George's, Hanover Sq.
1,616	13,007	11·80	94·94	8·05	2. Mayfair	
6,907	57,972	12·72	106·76	8·39	3. Belgrave	
3,715	38,478	17·61	182·36	10·36	4. St. John, Westminster	
2,799	27,781	4·78	47·41	9·93	5. St. Margaret	
17,080	155,936	9·01	82·29	9·13	Total	
1,111	12,860	20·57	238·15	11·58	1. Golden Square	5. Westminster
722	10,287	30·08	428·63	14·25	2. Berwick Street	
1,384	10,472	16·48	125·24	7·57	3. St. James's Square	
1,337	17,562	24·76	325·22	13·14	4. St. Anne's, Soho	
4,544	51,181	21·08	236·95	11·24	Total	
2,322	28,579	20·73	255·17	12·31	1. All Souls	6. Marylebone
1,778	15,425	15·87	137·72	8·68	2. Cavendish Square	
2,158	26,384	18·60	227·45	12·23	3. Rectory	
2,209	21,786	20·45	201·72	9·86	4. St. Mary's	
3,533	33,944	6·95	66·82	9·61	5. Christchurch	
4,340	33,136	7·99	61·02	7·64	6. St. John	
16,340	159,254	10·90	106·24	9·75	Total	
4,348	32,281	1·93	14·36	7·42	1. Hampstead	7. Hampstead
4,366	38,200	10·65	93·17	8·75	1. Regent's Park	8. Pancras
2,517	29,370	17·48	203·96	11·67	2. Tottenham Court	
2,923	29,221	18·98	189·75	10·00	3. Gray's Inn Lane	
3,857	38,533	21·08	210·32	9·99	4. Somers Town	
1,909	17,943	11·57	108·75	9·40	5. Camden ,,	
8,531	68,198	5·34	42·70	7·99	6. Kentish ,,	
24,103	221,465	9·09	83·48	9·19	Total	

TABLE D.—*London. Houses per Acre, Population*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1861.				
			Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
9. Islington	1. Islington, west	1,222	9,427	75,442	7·71	61·74	8·00
	2. „ east	1,870	11,277	79,899	6·03	42·73	7·09
	Total	3,092	20,704	155,341	6·70	50·24	7·16
10. Hackney	1. Stoke Newington	589	1,040	6,608	1·77	11·22	6·35
	2. Stamford Hill	600	999	5,483	1·66	9·14	5·49
	3. West Hackney	466	3,985	24,265	8·55	52·07	6·09
	4. Hackney	1,760	4,970	31,481	2·82	17·89	4·20
	5. South Hackney	419	2,398	15,458	5·72	36·89	6·45
	Total	3,834	13,392	83,295	3·49	21·73	6·22
11. St. Giles	1. St. George, Bloomsbury	122	1,990	17,392	16·31	142·56	8·74
	2. St. Giles, south	64	1,343	19,483	20·98	304·42	14·51*
	3. „ north	59	1,357	17,201	23·00	291·54	12·68
	Total	245	4,690	54,076	19·14	220·72	11·53
12. Strand	1. Charing Cross	248	1,248	11,071	5·03	44·64	8·87
	1. Long Acre	38	992	11,618	26·11	305·74	11·71
	2. St. Mary-le-Strand	56	971	10,346	17·34	184·75	10·65
	3. St. Clement Danes	61	1,434	15,207	23·51	249·29	10·60
	Total	403	4,645	48,242	11·53	119·71	10·39
13. Holborn	1. St. George the Martyr	104	1,922	19,903	18·48	191·38	10·36
	2. St. Andrew, eastern	33	1,082	12,947	32·79	392·34	11·97
	3. Saffron Hill	60	1,105	12,012	18·42	200·20	10·87
(Formerly Clerkenwell district)	4. St. James	73	1,928	19,152	26·41	262·36	9·93
	5. Amwell	83	1,697	17,250	20·45	207·83	10·17
	6. Pentonville	133	1,574	13,079	11·83	98·34	8·31
	7. Goswell Road	91	1,889	16,200	20·76	178·02	8·58
(Formerly St. Luke's district)	8. Old Street	51	1,321	11,504	25·90	225·57	8·71
	9. City Road	72	1,925	17,860	26·74	248·06*	9·28
	10. Whitecross Street	33	1,566	14,778	47·45	447·82	9·44
	11. Finsbury	79	1,544	12,931	19·54	163·69	8·37
	Total	812	17,553	167,616	21·62	206·43	9·55
14. London City	1. St. Botolph	83	2,322	20,990	27·98	252·89	9·04
	2. Cripplegate	66	2,167	19,697	32·83	298·44	9·09
	3. St. Sepulchre	48	1,022	11,750	21·29	244·79	11·50
	4. St. Brides	83	1,558	15,395	18·77	185·48	9·88
	5. Castle Baynard—						
	Castle Baynard	55	838	7,762	15·24	141·13	9·26
	Christchurch	73	1,266	9,020	17·34	123·56	7·12
	Queenhithe	83	1,263	8,570	15·22	103·25	6·79
		211	3,367	25,352	15·96	120·15	7·53

per Acre and per House, 1841 *to* 1881—*Contd.*

1871.					Registration Sub-Districts.	Registration Districts.
Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.		
11,559	97,820	9·46	80·05	8·46	1. Islington, west	9. Islington
15,520	115,958	8·30	62·01	7·47	2. ,, east	
27,079	213,778	8·76	69·14	7·89	Total	
1,556	9,841	2·64	16·71	6·32	1. Stoke Newington	10. Hackney
1,145	6,598	1·91	11·00	5·76	2. Stamford Hill	
4,354	28,069	9·34	60·23	6·45	3. West Hackney	
7,702	50,104	4·38	28·47	6·51	4. Hackney	
4,590	30,339	10·95	72·41	6·61	5. South Hackney	
19,347	124,951	5·05	32·59	6·46	Total	
2,017	17,853	16·53	146·34	8·85	1. St. George, Bloomsbury	11. St. Giles
1,214	19,109	18·97	298·58	15·74	2. St. Giles, south	
1,335	16,594	22·63	281·25	12·43	3. ,, north	
4,566	53,556	18·64	218·59	11·73	Total	
1,100	9,859	4·44	39·75	8·96	1. Charing Cross	12. Strand
983	11,379	25·87	299·45	11·58	1. Long Acre	
898	9,378	16·04	167·46	10·44	2. St. Mary-le-Strand	
1,036	10,723	16·98	175·79	10·35	3. St. Clement Danes	
4,017	41,339	9·97	102·58	10·29	Total	
1,862	20,521	17·90	197·32	11·02	1. St. George the Martyr	13. Holborn
1,062	13,529	32·18	409·97	12·74	2. St. Andrew, eastern	
841	9,066	14·02	151·10	10·78	3. Saffron Hill	
1,784	18,917	24·44	259·14	10·60	4. St. James	(Formerly Clerkenwell district)
1,580	16,884	19·04	203·42	10·69	5. Amwell	
1,581	13,337	11·89	100·28	8·44	6. Pentonville	
1,889	16,242	20·76	178·48	8·60	7. Goswell Road	
1,348	12,161	26·43	238·45	9·02	8. Old Street	(Formerly St. Luke's district)
1,851	18,301	25·71	254·18	9·89	9. City Road	
1,430	13,792	43·33	417·94	9·65	10. Whitecross Street	
1,227	10,741	15·53	135·96	9·75	11. Finsbury	
16,455	163,491	20·26	201·34	9·94	Total	
1,755	14,540	21·14	175·18	8·28	1. St. Botolph	14. London City
1,574	13,638	23·85	206·64	8·66	2. Cripplegate	
715	7,562	14·90	157·54	10·58	3. St. Sepulchre	
1,169	11,185	14·08	134·76	9·57	4. St. Brides	
					5. Castle Baynard—	
479	4,426	8·71	80·47	9·24	Castle Baynard	
688	6,270	9·42	85·89	9·11	Christchurch	
777	4,753	9·36	57·27	6·12	Queenhithe	
1,944	15,449	9·21	73·22	7·95		

TABLE D.—*London. Houses per Acre, Population*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water. 1881.	1861.				
			Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
	6. Allhallows, Barking	82	1,344	8,659	16·39	105·60	6·44
	7. Broad Street	95	1,651	11,544	17·38	121·52	6·99
	Total	668	13,431	113,387	20·11	169·75	8·44
15. Shoreditch	1. Holywell	67	2,154	17,313	32·15	258·40	8·04
	2. St. Leonards	74	2,854	19,188	38·57	259·30	6·72
	3. Hoxton New Town	127	3,182	26,516	25·06	208·79	8·33
	4. ,, Old Town	115	3,233	25,777	28·11	224·15	7·97
	5. Haggerstone, west.....	128	3,142	23,260	24·55	181·72	7·40
	,, east	123	2,507	17,310	20·38	140·73	6·90
	Total	634	17,072	129,364	26·93	204·04	7·58
16. Bethnal Green	1. Hackney Road.....	140	3,745	26,298	26·75	187·84	7·02
	2. Green	374	4,466	31,789	11·94	85·00	7·12
	3. Church	131	3,849	25,528	29·38	194·87	6·63
	4. Town.....	93	2,671	21,486	28·72	231·03	8·04
	Total	738	14,731	105,101	19·96	142·41	7·13
17. Whitechapel	1. Artillery	25	731	6,557	29·24	262·28	8·97
	Spitalfields	52	1,533	15,700	29·48	301·93	10·24
		77	2,264	22,257	29·40	288·97	9·83
	2. Mile End New Town	58	1,634	15,392	28·17	265·39	9·42
	3. Whitechapel, north.....	59	1,508	12,122	25·56	205·46	8·04
	4. ,, Church ...	46	999	8,062	21·72	175·26	8·07
	5. Goodman's Fields.	51	1,260	11,166	24·71	218·94	8·86
	6. Aldgate.....	81	999	9,971	12·33	123·10	9·98
	Total	372	8,664	78,970	23·29	212·29	9·11
18. St. George-in-the-East	1. St. Mary	62	2,348	18,181	38·45	293·24	7·63
	2. St. Paul	84	2,793	21,015	33·25	250·18	7·52
	3. St. John	67	992	9,695	14·81	144·70	9·77
	Total	213	6,169	48,891	28·96	229·54	7·93
19. Stepney	1. Shadwell	99	1,501	12,537	15·10	126·64	8·35
	2. Ratcliffe	108	2,246	16,874	20·80	156·24	7·51
	3. Limehouse	214	3,694	27,161	17·26	126·92	7·35
	Total	421	7,441	56,572	17·67	134·38	7·60
20. Mile End Old Town	1. Mile End Old Town, upper.....	189	4,829	33,747	25·55	178·55	6·99
	2. Mile End Old Town, lower	484	5,929	39,317	12·25	81·23	6·63
	Total	673	10,758	73,064	15·98	108·57	6·79

per Acre and per House, 1841 *to* 1881—*Contd.*

1871.					Registration Sub-Districts.	Registration Districts.
Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.		
1,021	5,764	12·45	70·29	5·65	6. Allhallows, Barking	
1,237	7,845	13·02	82·58	6·34	7. Broad Street	
9,415	75,983	14·09	113·75	8·07	Total	
1,529	12,430	22·82	185·52	8·13	1. Holywell	15. Shoreditch
2,091	16,545	28·26	223·58	7·91	2. St. Leonards	
3,157	27,835	24·86	219·17	8·82	3. Hoxton New Town	
3,235	26,933	28·13	234·20	8·33	4. „ Old Town	
2,941	24,162	22·98	188·76	8·22	5. Haggerstone, west	
2,616	19,259	21·27	156·58	7·36	„ east	
15,569	127,164	24·56	200·57	8·17	Total	
4,003	29,822	28·59	213·01	7·45	1. Hackney Road	16. Bethnal Green
5,574	42,433	14·90	113·46	7·61	2. Green	
3,776	26,577	28·82	202·88	7·04	3. Church	
2,546	21,272	27·38	228·73	8·36	4. Town	
15,899	120,104	21·54	162·74	7·55	Total	
684	6,681	27·36	266·04	9·72	1. Artillery	17. Whitechapel
1,431	15,848	27·52	304·77	10·07	Spitalfields	
2,115	22,499	27·47	292·20	10·64		
1,748	15,550	30·14	268·10	8·90	2. Mile End New Town	
1,434	11,597	24·31	196·56	8·09	3. Whitechapel, north	
905	7,322	19·67	159·17	8·09	4. „ Church	
1,137	10,381	22·29	203·55	9·13	5. Goodman's Fields	
933	9,224	11·52	113·88	9·89	6. Aldgate	
8,272	76,573	22·24	205·84	9·26	Total	
2,315	17,900	37·34	288·71	7·73	1. St. Mary	18. St. George-in-the-East
2,748	21,350	32·71	254·17	7·77	2. St. Paul	
869	8,802	12·97	131·37	10·13	3. St. John	
5,932	48,052	27·85	225·60	8·10	Total	
1,590	11,640	16·06	117·58	7·32	1. Shadwell	19. Stepney
2,143	16,131	19·84	149·36	7·53	2. Ratcliffe	
4,083	29,919	19·08	139·81	7·33	3. Limehouse	
7,816	57,690	18·57	137·03	7·38	Total	
5,200	38,128	27·51	201·73	7·33	1. Mile End Old Town, upper	20. Mile End Old Town
7,836	55,024	16·19	113·69	7·02	2. Mile End Old Town, lower	
13,036	93,152	19·37	138·41	7·15	Total	

TABLE D.—*London. Houses per Acre, Population*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water 1881.	1861. Number of Houses.	1861. Population.	1861. Houses per Acre.	1861. Population per Acre.	1861. Population per House.
21. Poplar	1. Bow	526	—	—	—	—	—
	2. Bromley	587	—	—	—	—	—
		1,113	5,255	35,667	4·72	32·05	6·79
	3. Poplar	1,004	5,868	43,529	5·84	43·36	7·42
	Total	2,117	11,123	79,196	5·25	37·41	7·12
22. St. Saviour's, Southwark	1. Christchurch	77	1,891	17,069	24·56	221·68	9·03
	2. St. Saviour's	127	2,580	19,101	20·32	150·40	7·40
	3. Kent Road	103	2,700	19,652	26·21	190·80	7·28
	4. Borough Road	64	2,092	16,668	32·69	260·44	7·97
	5. London Road	117	2,446	19,190	20·91	164·02	7·85
	6. Trinity, Newington	146	3,410	22,675	23·36	155·31	6·65
	7. St. Peter's, Walbrook	318	6,975	44,463	21·93	139·82	6·37
	8. St. Mary's	167	2,355	15,082	14·10	90·31	6·40
	Total	1,119	24,449	173,900	21·85	155·41	7·11
23. St. Olave, Southwark	1. St. Olave, Southwark	56	764	7,663	13·64	136·84	10·16
	2. St. John, Horsleydown	69	1,445	11,393	20·94	165·10	7·88
	3. Leather Market	93	2,395	16,696	25·75	179·53	6·97
	4. St. Mary Magdalen	142	2,195	16,505	15·46	116·23	7·52
	5. St. James's, Bermondsey	392	3,630	25,154	9·26	64·17	6·93
	6. Rotherhithe	579	3,521	24,502	6·08	42·32	6·96
	Total	1,331	13,950	101,913	10·48	76·57	7·31
24. Lambeth	1. Waterloo Road, 1st	67	1,736	15,269	25·91	227·90	8·80
	2. ,, 2nd	100	2,179	18,640	21·79	186·40	8·55
	3. Lambeth Church, 1st	162	2,429	19,839	14·99	122·46	8·17
	4. ,, 2nd	186	3,918	29,542	21·06	158·83	7·54
	5. Kennington, 1st	490	4,761	30,785	9·72	62·83	6·47
	6. ,, 2nd	498	3,523	20·440	7·07	41·04	5·80
	7. Brixton	1,430	3,223	20,067	2·25	14·03	6·23
	8. Norwood	1,009	1,141	7,462	1·13	7·40	6·54
	Total	3,942	22,910	162,044	5·81	41·11	7·07
25. Wandsworth	1. Clapham	1,137	3,404	20,894	2·99	18·38	6·14
	2. Battersea	2,170	3,125	19,600	1·44	9·03	6·27
	3. Wandsworth	2,405	1,909	13,346	0·79	5·55	6·99
	4. Putney	2,215	1,135	6,481	0·51	2·93	5·71
	5. Streatham	3,465	1,613	10,082	0·47	2·91	6·25
	Total	11,392	11,186	70,403	0·98	6·18	6·29

per Acre and per House, 1841 *to* 1881—*Contd.*

1871.						
Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.	Registration Sub-Districts.	Registration Districts.
3,829	26,055	7·28	49·53	6·80	1. Bow	21. Poplar
3,782	41,710	9·85	71·06	7·21	2. Bromley	
9,611	67,765	8·64	60·88	7·05		
6,651	48,611	6·62	48·42	7·31	3. Poplar	
16,262	116,376	7·68	54·97	7·15	Total	
1,584	14,573	20·57	189·26	9·20	1. Christchurch	22. St. Saviour's, Southwark
2,142	15,677	16·87	123·44	7·32	2. St. Saviour's	
2,679	20,421	26·10	198·26	7·62	3. Kent Road	
1,926	16,605	30·09	260·86	8·67	4. Borough Road	
2,305	18,961	19·70	162·06	8·23	5. London Road	
3,359	23,682	23·01	162·21	7·05	6. Trinity, Newington	
6,848	48,248	21·53	151·72	7·05	7. St. Peter's, Walbrook	
2,471	16,792	14·80	100·55	6·80	8. St. Mary's	
23,314	175,049	20·83	156·43	7·51	Total	
454	4,373	8·11	78·09	9·63	1. St. Olave, Southwark	23. St. Olave, Southwark
1,314	10,500	19·04	152·17	7·99	2. St. John, Horsleydown	
2,395	16,787	25·75	180·51	7·01	3. Leather Market	
2,052	15,709	14·45	110·63	7·66	4. St. Mary Magdalen	
6,182	47,933	15·77	122·28	7·75	5. St. James's, Bermondsey	
3,932	27,096	6·79	46·80	6·89	6. Rotherhithe	
16,329	122,398	12·27	91·96	7·50	Total	
1,593	14,074	23·78	210·06	8·83	1. Waterloo Road, 1st	24. Lambeth
2,153	18,465	21·53	184·65	8·58	2. ,, 2nd	
2,264	19,492	13·98	120·32	8·61	3. Lambeth Church, 1st	
4,442	35,833	23·88	192·65	8·07	4. ,, 2nd	
6,030	41,286	12·31	84·26	6·85	5. Kennington, 1st	
5,111	31,221	10·26	62·69	6·11	6. ,, 2nd	
5,554	35,435	3·88	24·78	6·38	7. Brixton	
1,982	12,536	1·96	12·42	6·32	8. Norwood	
89,129	208,342	7·39	52·85	7·15	Total	
4,334	27,047	3·81	24·05	6·31	1. Clapham	25. Wandsworth
7,914	54,016	3·65	24·89	6·83	2. Battersea	
2,964	19,783	1·23	8·23	6·67	3. Wandsworth	
1,603	9,439	0·72	4·26	5·89	4. Putney	
2,339	14,478	0·68	4·18	6·19	5. Streatham	
19,154	125,060	1·68	10·98	6·53	Total	

TABLE D.—*London. Houses per Acre, Population*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1861.				
			Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
26. Camberwell	1. Dulwich	1,450	294	1,723	0·20	1·19	5·86
	2. Camberwell	1,378	3,444	21,297	2·50	15·46	6·18
	3. Peckham	1,175	4,948	28,135	4·21	23·94	5·69
	4. St. George	447	3,412	20,333	7·63	45·49	5·96
	Total	4,450	12,098	71,488	2·72	16·06	5·19
27. Greenwich	1. St. Paul, Deptford	1,575	5,905	37,834	3·75	24·02	6·41
	2. St. Nicholas ,, ...	108	1,172	8,139	10·85	75·36	6·94
	3. Greenwich, west	307	3,651	21,696	11·89	78·39	5·94
	4. ,, east	1,427	2,497	18,306	1·75	12·83	7·33
	Total	3,417	13,225	85,975	3·87	25·16	6·50
28. Lewisham	1. Eltham	4,417	537	3,009	0·12	0·68	5·60
	2. Lee (ex-Kidbrooke)	1,234	953	6,162	0·77	4·99	6·47
	3. Lewisham (part of)	366	807	4,841	2·20	13·23	6·00
		1,600	1,760	11,003	1·10	6·88	6·25
	4. Lewisham Villlage	3,744	1,326	7,372	0·35	1·97	5·56
	5. Sydenham.....	1,616	1,656	10,595	1·02	6·56	6·40
		6,963	4,742	28,970	0·68	4·16	6·11
	Total	11,377	5,279	31,979	0·46	2·81	6·06
29. Woolwich	Charlton	1,231	1,117	8,472	0·91	6·88	7·58
	Kidbrooke Liberty.....	748	116	804	0·16	1·07	6·93
		1,979	1,233	9,276	0·62	4·69	7·52
	Woolwich Dockyard	399	2,301	22,919	5·77	57·44	9·96
	,, Arsenal	714	2,295	18,776	3·21	26·30	8·18
	Plumstead, east	349	—	—	—	—	—
	,, west.....	3,018	—	—	—	—	—
		3,367	3,195	24,502	0·95	7·28	7·67
	Total	6,459	9,024	75,473	1·40	11·69	8·36
	Total of London	74,427	359,421	2,803,989	4·83	37·67	7·80

per Acre and per House, 1841 *to* 1881—*Contd.*

1871.					Registration Sub-Districts.	Registration Districts.
Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.		
646	4,041	0·45	2·79	6·26	1. Dulwich	26. Camberwell
5,000	31,254	3·63	22·68	6·25	2. Camberwell	
7,031	42,160	5·98	35·88	6·00	3. Peckham	
5,095	33,851	11·40	75·73	6·64	4. St. George	
17,772	111,306	3·99	25·01	6·26	Total	
8,523	53,714	5·41	34·10	6·30	1. St. Paul, Deptford	27. Greenwich
1,006	6,474	9·31	59·94	6·44	2. St. Nicholas, Deptford	
3,714	21,034	12·10	68·51	5·66	3. Greenwich, west	
2,928	19,378	2·05	13·58	6·62	4. ,, east	
16,171	100,600	4·73	29·44	6·22	Total	
784	4,539	0·18	1·03	5·79	1. Eltham	28. Lewisham
1,646	10,493	1·33	8·50	6·37	2. Lee (ex-Kidbrooke)	
959	5,947	2·62	16·25	6·20	3. Lewisham (part of)	
2,605	16,440	1·63	10·27	6·31		
2,099	11,513	0·56	3·08	5·49	4. Lewisham Village	
3,060	19,065	1·89	11·80	6·23	5. Sydenham	
7,764	47,018	1·12	6·76	6·06		
8,548	51,557	0·75	4·53	6·03	Total	
1,188	7,699	0·97	6·25	6·48	Charlton	29. Woolwich
208	1,865	0·28	2·49	8·96	Kidbrooke Liberty	
1,396	9,564	0·71	4·83	6·85		
2,093	17,226	5·25	43·17	8·23	Woolwich Dockyard	
2,558	18,331	3·58	25·67	7·17	,, Arsenal	
2,064	13,027	5·91	37·33	6·31	Plumstead, east	
2,393	15,232	0·79	5·05	6·37	,, west	
4,457	28,259	1·32	8·39	6·34		
10,504	73,380	1·63	11·36	6·99	Total	
414,767	3,254,260	5·61	43·73	7·79	Total of London	

TABLE D.—*London. Houses per Acre, Population per Acre and per House—Contd.*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1881. Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
1. Kensington	1. St. Mary, Paddington....	791	8,022	69,888	10·14	88·35	8·71
	2. St. John, „	441	5,209	37,330	11·81	84·65	7·17
	3. Kensington Town	1,493	14,085	120,141	9·43	80·47	8·53
	4. Brompton.....	693	6,086	43,010	8·78	62·06	7·07
	Total	3,418	33,402	270,369	9·77	79·10	8·09
2. Fulham	1. St. Peter's, Hammersmith.....	115	1,264	7,599	6·83	41·08	6·01
	2. St. Paul's, Hammersmith	2,095	9,272	64,340	4·43	30·71	6·94
	3. Fulham.....	1,716	5,833	42,900	3·40	25·00	7·35
	Total	3,996	16,369	114,839	4·10	28·74	7·02
3. Chelsea	1. Chelsea, south	304	3,298	30,396	10·85	99·99	9·22
	2. „ north-west.....	209	3,303	24,925	15·80	119·26	7·55
	3. „ north-east	280	4,490	32,807	16·04	117·17	7·31
	Total	793	11,091	88,128	13·99	111·13	7·95
4. St. George's, Hanover Sq.	1. Hanover Square	418	1,985	16,862	4·75	40·34	8·49
	2. Mayfair.....	137	1,556	13,491	11·38	98·47	8·67
	3. Belgrave	543	8,036	59,220	14·80	109·06	7·37
	4. St. John, Westminster ..	211	3,610	35,496	17·11	168·23	9·83
	5. St. Margaret	586	2,618	24,679	4·47	42·11	9·43
	Total	1,895	17,805	149,748	9·40	79·02	8·41
5. Westminster	1. Golden Square.....	54	1,057	11,608	19·57	214·97	10·98
	2. Berwick Street.....	24	1,965	18,333	18·19	169·75	9·33
	3. St. James's Square	84					
	4. St. Anne, Soho	54	1,263	16,608	23·39	307·55	13·15
	Total	216	4,285	46,549	19·84	215·51	10·86
6. Marylebone	1. All Souls	112	2,211	26,759	19·74	238·92	12·10
	2. Cavendish Square	112	1,725	14,891	15·40	132·96	8·63
	3. Rectory.....	116	2,064	24,809	17·79	213·87	12·01
	4. St. Mary's.....	108	2,199	21,118	20·36	195·54	9·60
	5. Christchurch	508	3,475	33,700	6·84	66·34	9·70
	6. St. John	543	4,359	33,633	8·03	61·94	7·72
	Total	1,499	16,033	154,910	10·70	103·34	9·66
7. Hampstead ...	1. Hampstead	2,248	5,873	45,452	2·61	20·22	7·74
8. Pancras	1. Regent's Park	410	4,378	39,115	10·68	95·40	8·93
	2. Tottenham Court	144	2,420	27,729	16·81	192·56	11·46
	3. Gray's Inn Lane	154	2,956	30,247	19·19	196·41	10·23
	4. Somers Town	183	3,202	34,369	17·50	187·81	10·73
	5. Camden „	165	1,688	17,311	10·23	104·92	10·26
	6. Kentish „	1,597	10,057	87,487	6·30	54·78	8·70
	Total	2,653	24,701	236,258	9·31	89·05	9·56

TABLE D.—*London. Houses per Acre, Population per Acre and per House—Contd.*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water 1881.	1881.				
			Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
9. Islington	1. Islington, west	1,222	13,494	121,452	11·04	99·39	9·00
	2. „ east	1,870	20,552	161,413	10·99	86·32	7·85
	Total	3,092	34,046	282,865	11·01	91·49	8·31
10. Hackney	1. Stoke Newington	589	3,542	22,781	6·01	38·68	6·43
	2. Stamford Hill	600	1,508	9,277	2·51	15·46	6·15
	3. West Hackney	466	5,529	37,610	11·86	80·71	6·80
	4. Hackney	1,760	11,146	76,911	6·33	43·70	6·90
	5. South Hackney	419	5,751	39,883	13·73	95·19	6·93
	Total	3,834	27,476	186,462	7·17	48·63	6·79
11. St. Giles	1. St. George, Bloomsbury	172	1,864	16,681	15·28	136·73	8·95
	2. St. Giles, south	64	1,000	14,864	15·63	232·25	14·86
	3. „ north	59	1,098	13,837	18·61	234·53	12·60
	Total	245	3,962	45,382	16·17	185·23	11·45
12. Strand	1. Charing Cross	248	(Not given separately)				
	1. Long Acre	38	1,716	17,508	6·00	61·22	10·20
	2. St. Mary-le-Strand	56	773	7,515	13·80	134·20	9·72
	3. St. Clement Danes	61	802	8,559	13·15	140·31	10·67
	Total	403	3,291	33,582	8·17	83·33	10·20
13. Holborn	1. St. George the Martyr	104	1,637	18,671	15·74	179·53	11·41
	2. Andrew, eastern	23	869	10,706	26·33	324·42	12·32
	3. Saffron Hill	60	732	6,533	12·20	108·88	8·92
(Formerly Clerkenwell district)	4. St. James	73	1,930	17,516	26·44	239·94	9·08
	5. Amwell	83	1,631	19,281	19·65	232·30	11·82
	6. Pentonville	133	1,619	14,773	12·17	111·08	9·12
	7. Goswell Road	91	1,924	17,506	21·14	192·38	9·10
(Formerly St. Luke's district)	8. Old Street	51	1,260	11,541	24·71	226·29	9·16
	9. City Road	72	1,894	18,628	26·31	258·72	9·84
	10. Whitecross Street	33	830	9,217	25·15	279·31	11·10
	11. Finsbury	79	817	7,463	10·34	94·47	9·13
	Total	812	15,143	151,835	18·65	186·99	10·03
14. London City	1. St. Botolph	83	1,262	11,174	15·20	134·63	8·85
	2. Cripplegate	66	810	7,193	12·27	108·99	8·88
	3. St. Sepulchre	48	487	5,358	10·15	111·62	11·00
	4. St. Bride's	83	893	8,396	10·76	101·39	9·40
	5. Castle Baynard—						
	Castle Baynard	55	323	2,890	5·87	52·55	8·95
	Christchurch	73	454	3,941	6·22	53·99	8·68
	Queenhithe	83	583	3,154	7·02	38·00	5·41
		211	1,360	9,985	6·45	47·32	7·34

TABLE D.—*London. Houses per Acre, Population per Acre and per House—Contd.*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1881.				
			Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
	6. Allhallows, Barking ...	82	741	3,681	9·04	44·89	4·97
	7. Broad Street ...	95	1,009	5,652	10·62	59·49	5·60
	Total ...	668	6,562	51,439	9·82	77·01	7·84
15. Shoreditch	1. Holywell ...	67	945	7,376	14·10	110·09	7·81
	2. St. Leonards ...	74	2,176	14,967	29·41	202·26	6·88
	3. Hoxton New Town ...	127	3,159	29,937	24·87	235·72	9·48
	4. ,, Old Town ...	115	3,296	28,036	28·66	243·79	8·51
	5. Haggerstone, west ...	128	5,580	46,275	22·23	184·36	8·29
	,, east ...	123					
	Total ...	634	15,156	126,591	23·91	199·67	8·35
16. Bethnal Green	1. Hackney Road ...	140	3,774	29,738	26·96	212·41	7·88
	2. Green ...	374	6,051	47,932	16·18	128·16	7·92
	3. Church ...	131	4,399	29,981	33·58	228·86	6·82
	4. Town ...	93	2,382	19,310	25·61	207·63	8.11
	Total ...	738	16,606	126,961	22·50	172·03	7·65
17. Whitechapel	1. Artillery ...	25	Not given separately.				
	Spitalfields ...	52					
		77	2,003	22,585	26·01	293·31	11·28
	2. Mile End New Town	58	1,690	15,473	29·14	266·78	9·16
	3. Whitechapel, north ...	59	1,244	10,001	21·08	169·66	8·05
	4. ,, Church	46	872	7,489	18·96	162·81	8·59
	5. Goodman's Fields ...	51	1,110	9,713	21·76	190·45	8·75
	6. Aldgate ...	81	609	6,102	7·52	75·33	10·02
	Total ...	372	7,528	71,363	20·24	191·84	9·48
18. St. George-in-the-East ...	1. St. Mary ...	62	2,333	18,125	37·63	292·34	7·77
	2. St. Paul ...	84	2,630	20,622	31·31	245·50	7·84
	3. St. John ...	67	818	8,410	12·21	125·52	10·28
	Total ...	312	5,781	47,157	27·14	221·40	8·16
19. Stepney ...	1. Shadwell ...	99	1,444	10,395	14·59	105·00	7·20
	2. Ratcliffe ...	108	2,125	16,107	19·68	149·14	7·58
	3. Limehouse ...	214	4,435	32,041	20·72	149·72	7·22
	Total ...	421	8,004	58,543	19·01	139·06	7·31
20. Mile End Old Town ...	1. Mile End Old Town, upper ...	189	5,099	37,960	26·98	200·84	7·44
	2. Mile End Old Town, lower ...	484	8,940	67,653	18·47	139·78	7·57
	Total ...	673	14,039	105,613	20·86	156·93	7·52

TABLE D.—*London. Houses per Acre, Population per Acre and per House—Contd.*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1881.				
			Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
21. Poplar	1. Bow	526	5,009	37,074	9·52	70·48	7·40
	2. Bromley	587	8,241	64,359	14·04	109·64	7·81
		1,113	13,250	101,433	11·90	91·13	7·66
	3. Poplar	1,004	7,225	55,077	7·20	54·86	7·62
	Total	2,117	20 475	156,510	9·67	73·93	7·64
22. St. Saviour's, Southwark	1. Christchurch	77	1,419	13,663	18·43	177·44	9·63
	2. St. Saviour's	127	2,046	14,999	16·11	118·10	7·33
	3. Kent Road	103	2,638	21,381	25·61	207·58	8·10
	4. Borough Road	64	1,880	15,953	29·38	249·26	8·49
	5. London „	117	2,243	21,318	19·17	182·20	9·53
	6. Trinity, Newington	146	3,487	26,672	23·88	182·68	7·65
	7. St. Peter's, Walbrook	318	7,718	59,555	24·27	187·28	7·72
	8. St. Mary's	167	2,770	21,623	16·59	129·48	7·81
	Total	1,119	24,201	195,164	21·63	174·41	8·06
23. St. Olave, Southwark	1. St. Olave, Southwark	56	350	3,028	6·25	54·07	8·65
	2. St. John, Horsleydown	69	1,174	8,928	17·01	129·39	7·60
	3. Leather Market	93	2,282	16,300	24·54	175·27	7·14
	4. St. Mary Magdalen	142	2,014	15,669	14·18	110·34	7·78
	5. St. James, Bermondsey	392	6,787	54,683	17·31	139·50	8·06
	6. Rotherhithe	579	4,847	36,024	8·37	62·22	7·43
	Total	1,331	17,454	134,632	13·11	101·15	7·71
24. Lambeth	1. Waterloo Road, 1st	69	1,899	15,195	28·34	226·79	8·00
	2. „ 2nd	100	1,890	16,351	18·90	163·51	8·65
	3. Lambeth Church, 1st	162	2,253	19,876	13·91	122·69	8·82
	4. „ 2nd	186	4,689	39,859	25·21	214·29	8·50
	5. Kennington, 1st	490	6,390	45,232	13·04	92·31	7·08
	6. „ 2nd	498	5,595	35,332	11·23	70·95	6·31
	7. Brixton	1,430	9,847	62,837	6·89	43·94	6·38
	8. Norwood	1,009	2,841	19,017	2·82	18·85	6·69
	Total	3,942	35,404	253,699	8·98	64·36	7·17
25. Wandsworth	1. Clapham	1,137	5,604	36,380	4·93	32·00	6·49
	2. Battersea	2,170	14,605	107,262	6·73	49·43	7·34
	3. Wandsworth	2,405	4,249	28,004	1·77	11·64	6·59
	4. Putney	2,215	2,123	13,235	0·96	5·98	6·23
	5. Streatham	3,465	4,167	25,553	1·20	7·37	6·13
	Total	11,392	30,748	210,434	2·70	18·47	6·84

TABLE D.—*London. Houses per Acre, Population per Acre and per House—Contd.*

Registration Districts.	Registration Sub-Districts.	Acres, ex-Water, 1881.	1881.				
			Number of Houses.	Population.	Houses per Acre.	Population per Acre.	Population per House.
26. Camberwell	1. Dulwich	1,450	862	5,590	0·59	4·23	6·48
	2. Camberwell	1,378	9,217	59,104	6·69	42·89	6·41
	3. Peckham	1,175	10,767	71,089	9·16	60·45	6·60
	4. St. George	447	6,470	50,810	14·47	113·67	7·85
	Total	4,450	27,316	186,593	6·14	41·93	6·83
27. Greenwich	1. St. Paul, Deptford	1,575	11,428	76,752	7·26	48·73	6·71
	2. St. Nicholas, Deptford..	108	1,096	7,901	10·15	73·16	7·21
	3. Greenwich, west	307	3,748	21,972	12·21	71·57	6·11
	4. ,, east	1,427	3,499	24,608	2·45	17·24	7·03
	Total	3,417	19,781	131,233	5·79	38·41	6·63
28. Lewisham.....	1. Eltham	4,417	989	5,287	0·22	1·32	5·89
	2. Lee (ex-Kidbrooke) {	1,234	2,264	14,435	1·83	11·70	6·38
	3. Lewisham (part of).... {	366	1,134	7,124	3·10	19·46	6·28
	{	1,600	3,398	21,559	2·12	13·47	6·34
	4. Lewisham Village .... {	3,744	3,402	19,865	0·91	5·31	5·84
	5. Sydenham ..... {	1,616	4,168	26,076	2·58	16·14	6·26
		6,963	10,968	67,500	1·58	9·70	6·15
	Total	11,377	11,957	73,327	1·06	6·45	6·13
29. Woolwich ...	Charlton	1,231	1,361	8,764	1·11	7·12	6·44
	Kidbrooke Liberty.....	748	257	2,166	0·34	2·90	8·43
		1,979	1,618	10,930	0·82	5·52	6·76
	Woolwich Dockyard	399	2,287	17,617	5·73	44·15	7·70
	,, Arsenal	714	2,544	19,048	3·56	26·68	7·49
	Plumstead, east ..... {	349	{ 2,328	{ 14,009	{ 6·67	{ 40·14	{ 6·02
	,, west..... {	3,018	{ 2,920	{ 19,241	{ 0·97	{ 6·38	{ 6·59
		3,367	5,248	33,250	1·56	9·88	6·34
	Total	6,459	11,697	80,845	1·81	12·52	6·91
	Total of London	74,427	486,186	3,816,483	6·53	51·28	7·85

Population of London (1881).

Registration Districts.	Sub-Districts.	Area, ex-Water.	Population, 1881.	Population per Acre. 1861.	1871.	1881.
Districts where the Population is Decreasing.		Acres.				
St. George's, Hanover Square	—	1,895	149,748	82	82	79
Westminster	—	216	46,549	244	237	216
Marylebone	—	1,499	154,910	108	106	103
St. Giles	—	245	45,382	221	219	185
Strand	—	403	33,582	120	103	83
Holborn	—	812	151,835	206	201	187
London City	—	668	51,439	170	114	77
Shoreditch	—	634	126,591	204	201	200
Whitechapel	—	372	71,363	212	206	192
St. George-in-the-East	—	213	47,157	230	226	221
		6,857	878,556	—	average	128
Sub-Districts of other Districts in which the Population is Decreasing.						
Kensington	St. John, Paddington	441	37,330	81	86	84
St. Pancras	Tottenham Court	144	27,729	204	204	193
,,	Somers Town	183	34,369	213	210	188
,,	Camden ,,	165	17,311	141	109	105
Bethnal Green	Hackney Road	140	29,738	188	213	212
,,	,, Town	93	19,310	231	229	208
Stepney	Shadwell	99	10,395	127	118	105
,,	Ratcliffe	108	16,107	156	149	149
Mile End Old Town	Western Division	189	37,960	179	202	201
St. Saviour's, Southwark	Christchurch	77	13,663	222	189	177
,,	St. Saviour's	127	14,999	150	123	118
,,	Borough Road	64	15,953	260	260	249
St. Olave, Southwark	St. Olave	56	3,028	137	78	54
,,	St. John, Horsleydown	69	8,928	165	152	129
,,	Leather Market	93	16,300	180	180	175
,,	St. Mary, Magdalen	142	15,669	116	111	110
Lambeth	Waterloo Road, 2nd	100	16,351	186	185	164
		2,290	335,140	—	average	146
	Total	9,147	1,213,696	—	average	133
Districts where the Population is above Average per Acre, and Increasing.						
Kensington	—	3,418	270,369	43	64	79
Chelsea	—	793	88,128	80	90	111
St. Pancras	—	2,653	236,258	75	83	89
Islington	—	3,092	287,865	50	69	91
Bethnal Green	—	738	126,961	142	163	172
Stepney	—	421	58,543	134	137	139
Mile End Old Town	—	673	105,613	109	138	157
Poplar	—	2,117	156,510	37	55	74
St. Saviour's, Southwark	—	1,119	195,164	155	156	174
St. Olave, Southwark	—	1,331	134,632	77	92	101
Lambeth	—	3,942	253,699	41	53	64
		20,297	1,908,742	—	average	94
Deduct Sub-Districts in which Population is Decreasing		2,290	335,140	—	,,	146
		18,007	1,573,602	—	average	87

Population of London (1881)—*Contd.*

Registration Districts.	Sub-Districts.	Area, ex-Water.	Population, 1881.	Population per Acre.		
				1861.	1871.	1881.
Districts where Population below the Average per Acre, and Increasing Rapidly.		Acres.				
Fulham	—	3,996	114,839	10	17	29
Hampstead	—	2,248	45,452	9	14	20
Hackney	—	3,834	186,462	22	33	49
Wandsworth	—	11,392	210,434	6	11	18
Camberwell	—	4,450	186,593	16	25	42
Greenwich	—	3,417	131,233	25	29	38
Lewisham	—	11,377	73,327	3	5	6
Woolwich	—	6,459	80,845	12	11	13
		47,173	1,029,185	—	average	21·81

Summary.

	Acres.	Number.	Average Population per Acre.
10. Districts where population is diminishing	6,857	878,556	128
Sub-districts where the population is diminishing in the 8 districts where the population as a whole is still increasing	2,290	335,140	146
	9,147	1,213,696	133
11. Districts where population is above the average per acre and increasing, exclusive of the above sub-districts where the population is diminishing	18,007	1,573,602	87
8. Districts where the population is below the average per acre, and increasing rapidly	47,173	1,029,185	22
29	74,427	3,816,483	15

TABLE E.—*Population of London. Table showing the Decennial Rates of Increase of the Population from* 1801 *to* 1881.

Decade.	Population.	Amount of Increase per Decade.	Rate of Increase per Decade.	Decrement in the Rate of Increase.
			Per cnt.	Per cnt.
1801	958,863	—	—	—
'11	1,138,815	179,952	18·77	—
'21	1,378,947	240,132	21·09	—
'31	1,654,994	276,047	20·02	—
'41	1,948,417	293,423	17·73	—
'51	2,362,236	413,819	+21·24	—
'61	2,803,989	441,753	18·70	−11·96
'71	3,254,260	450,271	16·06	−14·12
'81	3,816,483	562,223	17·28	+ 7·60
		2,857,620	8)150·89	−18·48
Average			18·86	− 6·16
Average (initial and terminal years)			18·84	− 6·65

TABLE F.—*Estimate of the Future Increase of the Population of London (to an Average Density of* 94 *People per Acre. See Table X, p.* 381).

Based on Average Rate of Increase from 1801 to 1881, viz., 18·86 per Cent. per Decade.				Based on Average Decremental Rate of Increase from 1851 to 1881-86, viz., 6·16 per Cent. per Decade.			
Decade.	Population.	Amount of Increase from 1881.	Rate of Increase.	Decade.	Population.	Amount of Increase.	Decreased Rate of Increase −6·16 per Decade.
			Per cnt.				Per cnt.
1881	3,816,000	—	—	1881	3,816,000	—	—
'91	4,536,000	720,000	18·86	'91	4,432,000	616,000	16·13
1901	5,392,000	856,000	,,	1901	5,100,000	668,000	15·06
'11	6,409,000	1,017,000	,,	'11	5,817,000	717,000	14·06
'17	7,109,000	700,000	,,	'21	6,580,000	763,000	13·12
				'27	7,052,000	472,900	,,
		3,293,000				3,236,000	

TABLE G.—*Population and Increase per Cent. per Decade of the Population of London, Liverpool, and Manchester between* 1801 *and* 1881.

	London.		Liverpool.		Manchester.	
	Population.	Increase per Cent.	Population.	Increase per Cent.	Population.	Increase per Cent.
1801	958,863	—	82,295	—	76,788	—
'11	1,138,815	18·77	104,104	26·50	91,130	18·68
21	1,378,947	21·09	138,354	32·90	129,035	41·60
31	1,654,994	20·02	201,751	45·82	187,022	44·93
'41	1,948,417	17·73	286,487	42·00	242,983	29·92
'51	2,362,236	21·24	375,955	31·23	316,213	30·14
'61	2,803,989	18·70	443,938	18·08	357,979	13·21
'71	3,254,260	16·06	493,405	11·13	383,843	7·22
'81	3,816,483	17·28	552,508	11·98	393,585	2·54

TABLE H.—*London (in Middlesex, Surrey, and Kent).*

County.	1801.	1811.	Rate of Increase.	1821.	Rate of Increase.	1831.	Rate of Increase.	1841.	Rate of Increase.
			Per cnt.		Per cnt.		Per cnt.		Pr. cnt.
London (in Middlesex)	746,718	869,634	16·46	1,045,711	20·25	1,245,184	19·08	1,444,999	16·05
London (in Surrey)	161,642	202,941	25·55	259,714	27·97	327,820	26·23	399 247	21·79
„ (in Kent)..	50,503	66,240	31·16	73,522	10·99	81,990	11·52	104,171	27·05
Total of London....	958,863	1,138,815	18·77	1,378,947	21·09	1,654,994	20·02	1,948,417	17·73

County.	1851.	Rate of Increase.	1861.	Rate of Increase.	1871.	Rate of Increase.	1881.	Rate of Increase.
		Per cnt		Per cnt.		Per cnt.		Per cnt.
London (in Middlesex)	1,745,601	20·80	2,030,814	16·34	2,286,568	12·60	2,550,556	11·55
London (in Surrey)	482,435	20·84	579,748	20·17	742,155	28·01	980,522	32·12
„ (in Kent)..	134,200	28·83	193,427	44·14	225,537	16·60	285,405	26·60
Total of London....	2,362,236	21·24	2,803,989	18·70	3,254,260	16·06	3,816,483	17·28

TABLE J.—*Population of the following extra-Metropolitan Parishes in* 1871 *and* 1881.

Registration Sub-District.	Civil Parish or Township.	Number of Acres in 1881.	Total Population.		Number of Persons per Acre in 1881.	Increase per Cent. of Population.	
			In 1871.	In 1881.		Between 1861 and 1871.	Between 1871 and 1881.
North of	*the Thames.*						
Tottenham	Tottenham	4,642	22,869	46,456	10	72·73	103·14
Walthamstow....	Walthamstow	4,374	10,692	21,715	5	55·41	103·10
Leyton	Wanstead	2,002	5,119	9,414	5	86·69	83·90
West Ham	Little Ilford	768	675	993	1	13·63	47·11
„	East Ham	2,498	4,334	9,713	4	91·43	124·11
Stratford ..... West Ham	West Ham	4,667	62,919	128,953	28	64·15	104·95
Leyton.....	Low Leyton	2,370	10,794	23,016	10	116·81	113·23
Acton	Acton	2,305	8,306	17,126	7	63·60	106·19
Hampton	Teddington	1,214	4,063	6,599	5	243·45	62·42
Brentford	Ealing	3,821	18,187	25,436	7	52·05	39·86
Acton	Hanwell	1,067	3,766	5,178	5	40·16	37·49
South of	*the Thames*						
Wimbledon.....	Wimbledon	3.220	9,087	15,950	5	93·66	75·53
Croydon	Croydon	9,901	55,652	78,953	8	84·03	41·87
„	Penge Hamlet....	770	13,202	18,650	24	163·25	41·27
Mortlake.....	Barnes	940	4,197	6,001	6	77·91	42·98
„	Mortlake	1,883	5,119	6,330	3	35·49	23·66

Discussion *on* Mr. R. Price-Williams's Paper.

The Chairman (Dr. T. Graham Balfour, F.R.S.) said he was sure they would all join with him in giving a cordial vote of thanks to Mr. Price-Williams for his paper. The labour involved in its preparation must have been very great indeed, and the results had been very clearly and intelligently placed before them. In estimating the number of houses to the acreage, the water area had very properly been excluded, but it was a question whether public parks and commons ought not also to have been excluded. Ground where it was impossible to build houses ought not to be estimated in the acreage that was likely to be occupied by inhabited houses; and although it would make no difference in a statement of the increase of the population comparing the period of one census with the period of another in that district, it certainly would vitiate any comparison between adjoining districts if the one had a very large portion of public ground, such for instance as Wimbledon, Putney, and Wandsworth Commons, and the other had no public ground at all, and in fact was occupied entirely by houses. It was therefore a matter for consideration whether in drawing up these tables, it would not have been better to have omitted not only the water but also those portions of land upon which, by Act of Parliament or otherwise, the building of houses was prohibited.

Dr. G. B. Longstaff thought a comparison of the diagrams of Liverpool and Manchester with that of London, although they were upon the same scale, involved a serious fallacy, since an addition of say 10,000 people to Manchester might mean at a certain period an increase of 20 per cent., whereas a like addition of 10,000 to London might only be an increase of 1 per cent. It was always necessary in comparing rates graphically to calculate out the percentages, and then plot them out upon the same vertical scale, so that the ordinates should be proportional to the rates of increase, and not to the gross numbers. Of course the population of Manchester had increased very much more rapidly than the small angle shown in the diagram would lead them to believe. The paper was one of extraordinary interest. There was no such collection of human beings in the world as London, and therefore any paper which dealt so exhaustively as the one before them with the great question of the population of London, had an interest extending far beyond the limits of England, and even beyond the limits of the British Empire. In a paper read at the Health Exhibition, he (Dr. Longstaff) had endeavoured to give some idea of the phenomenal size of the metropolis, by showing that London far exceeded in population not only Paris, the city that came nearest to it, but Scotland, Switzerland, and even our colonies at the Antipodes. It had double the population of Norway, Servia, of Greece, nearly double that of Denmark. Its inhabitants were three times as

numerous as those of New York or Berlin. London contained more people than Paris, Berlin, and Brussels taken together, while it more than doubled the united inhabitants of New York and the neighbouring cities of Brooklyn, Hoboken, and Jersey City. The problem therefore that Mr. Price-Williams had been considering, namely, the growth and distribution of this enormous amount of people on a comparatively small acreage, was unique. With regard to the question of recreation spaces in London, a very important point had been raised by the chairman. He (Dr. Longstaff) was born in that remarkable district of Wandsworth, and had seen the very unhappy spectacle of the increase of population in that district. The parish of Wandsworth appeared to have increased but slightly in comparison with Battersea, from the fact that a large portion of Wimbledon Common, and what little the railway companies had left of Wandsworth Common, was included in the parish of Wandsworth. They would be glad to hear that Battersea would not increase in the present decade as it had increased in the last, for it was getting filled up, and the area now left available for building was small. Although the population of Battersea had increased enormously, building had increased still more, and there were more empty houses in Battersea than in any other part of London. The question of estimating the possible density of population was a complex one, and every district must be taken by itself; very much depended upon the way in which it was originally laid out. A district like Battersea, laid out for the greater part in rows of small houses, showed a very rapid increase at first, but a maximum was very soon reached. In Putney, on the other hand, where the houses were of a better class, the growth was less rapid at first, but would be continued much longer, because the time would come when the detached and semi-detached houses would be pulled down and replaced by continuous houses. It must also have a distinct influence upon the density of the population in the future that in some districts such as Streatham, the proportion of fifty or sixty-foot roads was much greater than in the poorer districts. Then, on the other hand, in these new suburbs, although they had fortunately large commons, there were as a rule no squares and no small playgrounds, and there was every reason to suppose that the population would ultimately be very large indeed. Some parts of London had reached the maximum, and then more or less rapidly dwindled; but they must not necessarily believe that that diminution would go on, or that the like would occur in every place. Every one must have observed the recent tendency to erect all new buildings of a much greater height than those that preceded them, and it was to be hoped that the recommendations of the Royal Commission which had recently reported, would lead to some useful legislation against these high dwellings, otherwise ultimately the result would be a condition somewhat approaching that of Paris, where the density was very much greater than in London. The Waterloo Road subdistrict quoted by Mr. Price-Williams was a proof of this. There they found, owing to the demolition made by railway companies, the population had diminished, but the density had afterwards increased again, principally owing to the operations of the Peabody

Trust, which succeeded in putting more people upon an acre than anybody else. Another point influencing the possible density of a district was its suitability for residence or trade. A river frontage would not probably ever reach a great density in the future, on account of its great advantages for trade. The same would apply to the neighbourhood of goods depôts. On the other hand, low land far away from the river would probably support an immense population, because it would never be selected by the better classes for residence. He thought there was reason to hope that the present growth of London was not so rapid as it had been during the past decade. The official birth-rate rose from 34·5 in 1871 to 36·2 in 1880, showing a steady and continuous increase, a phenomenon which was generally considered to indicate that the population was increasing more rapidly than the registrar-general had estimated; and when the census was taken, it was in fact discovered that the population was nearly 125,000 beyond the estimate, which accounted for an increase of 1·2 in the birth-rate. Since 1881 the birth-rate had steadily diminished from 34·6 in 1881, to 33·7 in 1884; this was probably an indication that the population was not increasing so rapidly as in the last decade. The registrar-general estimated the increase of population since the census up to the present date at 248,000, but he (Dr. Longstaff) thought it was only 153,000, so that he believed it to be over estimated at the present moment by 95,000.

Professor Leone Levi said they were greatly indebted to Mr. Price-Williams for his very valuable and he might say exceedingly laborious paper. It must have cost him a great deal of time to prepare not only the paper and figures, but also the magnificent diagrams which he had placed before them. It was a great gift to a Society to have such a paper and such illustrations as they had been favoured with. The population of London bore a proportion of about $9\frac{1}{2}$ to that of the United Kingdom, a larger proportion probably than in any other capital in Europe, that is to say, 3,800,000 to 36,000,000. In the calculation of the possible increase of London, had Mr. Price-Williams properly estimated the possibility of a relative increase in the population of the United Kingdom? because if the population of the United Kingdom by emigration or any other circumstances, should not increase in the same proportion as heretofore, the population of London might not increase in the same proportion. That was an element that had not been dealt with in the paper. Allusion had been made to the relation of London to Paris. Paris had 2,300,000, and London 3,800,000. The relative increases of the two capitals showed that London in 1811 had 1,800,000, so that in 1881 the increase was 235 per cent., whereas Paris in 1817 had 714,000, and its population was now 2,269,000, showing an increase of 111 per cent., but upon a smaller number. The population of Paris was increasing rapidly, whereas the population of the whole country was stationary. It was an important fact that whilst London had a density of 50 persons to an acre, Paris had a density of 118 persons to an acre. London therefore stood much better in that respect, and yet

Paris was apparently the brighter and healthier capital. Its temperature was better, the air clearer, and the atmosphere not so dense with smoke. He found however that the number of persons per house was much larger in London than in Paris. In London there were 7·41 per house in 1841, and 7·84 in 1881. In Paris the number per house, meaning by it a flat or a *ménage*, was 3 persons. It was an important fact that the density was increasing in London in proportion to the population, that there were a larger number of persons in each house now than there were forty years ago. The mortality in Paris was greater than in London. In 1881 it was 25·30 as against 21·73. Illegitimacy was less in London than in Paris, and much less certainly than in many other capitals in Europe. It was gratifying to find that education was increasing in London. Before the Education Act of 1870 London compared badly with Paris and other large towns on the continent, but it was not so now; the number of persons capable of writing their names on the marriage register was very much larger than it used to be. It was important to remember that the rateable property in London had increased *pari passu* with the increase of population. In 1811 the rateable property of the metropolis was 5,740,000*l.*, giving an average of 50*s.* per head. In 1831 it was 5,921,000*l.*, or a proportion of 6*l.* 12*s.* 9*d.* per head; in 1881 the rateable property was 27,407,000*l.*, giving a proportion of 9*l.* 3*s.* 7*d.*; showing that notwithstanding the large expenditure that had been made by the Board of Works in new streets and new improvements, they had a large increase in the rateable property, and therefore the rate per pound was not so great as in many capitals in Europe. He did not believe that the rates in London were anything like those in Paris, and in any case they were exempt in London from the great annoyance of the octroi duties; while even the toll bars were generally removed, and there was freedom for the people to extend themselves over as wide an area as possible. It was much to be desired that the railway companies should afford the largest possible accommodation for people to spread themselves widely, because the more the people were concentrated in small quarters, the worse it was for their health and morals. If the penny journey was extended over all the railways, thus allowing the working classes to reside in the suburbs, the healthier and the better London would be.

Mr. Noel A. Humphreys said Mr. Price-Williams had taken the registration boundaries of Manchester and Liverpool and compared them with the registration boundaries of London, which led to a very deceptive result, because the whole of the increase of Manchester and Liverpool had taken place outside the registration districts. The diagrams therefore gave a fallacious impression of the increase of those towns compared with that of London. With regard to the reference to the fact that no registration sub-districts were mentioned prior to 1841, no doubt Mr. Price-Williams was fully aware that those sub-districts did not exist at the time of the previous census, and inasmuch as civil registration was not introduced until 1837, the census of 1831 could not by any possibility

give information about the registration sub-districts. The great difficulty in dealing with a question of that sort was to know what boundaries to adopt. The question was, What is London? A century ago the City was London, and when civil registration started in 1837, an arbitrary group of districts, forming the metropolitan poor law division, was accepted to represent London for registration purposes. The constant and comparatively steady rate of increase that had taken place within this area during the last eighty years was a proof that it did very fairly represent London, although it included a great deal of ground which at that time was comparatively rural. A great increase had recently taken place outside the registration boundary of London. These arbitrary boundaries presented the greatest difficulty in making any comparison with other towns. The municipal boundary of the city of Manchester, moreover, no longer represents Manchester. The population of that city had overgrown the boundaries, and had created a second great town of Salford, which was as much a part of Manchester as Southwark was a part of London. The comparative rate of increase of different towns presented therefore enormous difficulties. Dealing with the large area of London fixed forty years ago, they had a very fair idea of the growth of London up to a certain point, and the equable rate of increase within that area was extremely remarkable. The population doubled itself in the first forty years, and again in the next forty, showing a remarkably steady rate of increase notwithstanding extraordinary divergencies of increase and decrease in different districts. When they came to estimate what the increase was likely to be in the future, he thought that Mr. Price-Williams had taken too large a figure, for it seemed scarcely within the range of possibility that the area of registration of London as it now existed would ever contain 7 million inhabitants, especially if railway facilities, now increasing, gave the opportunity for the disintegration of the population. The population of the outer ring increased 50 per cent. between 1861 and 1871, and again 50 per cent. between 1871 and 1881, and there was the very greatest ground for believing that the rate of increase in the current decade would very far exceed that of the last. He therefore thought that in dealing with London they would be bound before long to take Greater London to represent London, for a great part of the real growth of London was taking place outside Registration London.

Mr. Rowland Hamilton said the difficulties of making any estimate in detail of numbers so fluctuating and under conditions so constantly changing as those of London or any other of their great cities were enormous, but that did not lower their debt of gratitude to Mr. Price-Williams for having given them some standing ground from which they could get at least some fixed data to work upon. It would be a great gain if some clue could be afforded by which the areas returned in consecutive census enumerations could be identified. He had suggested at the time of the last census that the returns of the enumerators of small districts should be preserved. Many of these were grouped together to form

a sub-district, and if the details of their composition were preserved at the time of one census, the exact changes in area which circumstances might require in the next census could be readily traced. Such a record of areas and of the condition of the population in them would add very much to the practical accuracy of statistics as time went on. The question of the height of houses was of vast importance; but even there, not one condition but several conditions must be borne in mind. The breadth of the streets was of course one factor, and the open area at the back between one row of houses and another was of even more importance. In some blocks of artizans' dwellings this condition was very fairly satisfied, but not in all; and in many houses, some of very pretentious appearance, the space at the back was culpably confined, and amounted to a dangerous overcrowding. They might be sure of this, that ground rent was so dear that there would always be a tendency to build very high, and the interest of sanitation required a proportionally larger space either of roads in front or of courts at the back, the latter the more important of the two, and the most likely to escape observation.

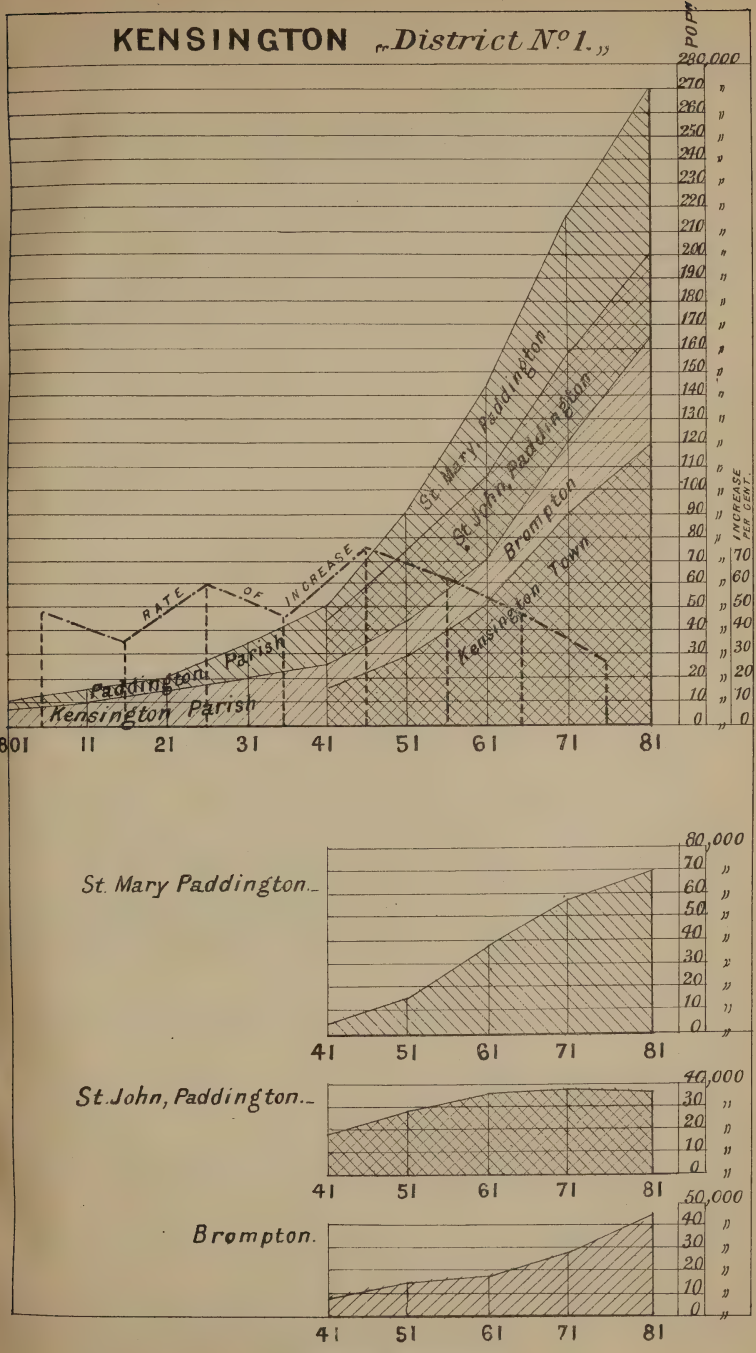
Major Craigie said although the paper was so voluminous and so interesting, it had still left untouched two questions with which he had hoped that it would deal. First, a reference to the changes in the trading population of London, and secondly the question of food supply, which must govern the future increase of London. If London was much increased either in area or density, the difficulty of distribution must also be increased, and that consideration would perhaps do more than anything else to arrest a future growth such as Mr. Price-Williams had suggested. Many plans for improving London government had been mooted, but he believed the problem of the future would be that of a *quasi* municipal extension of such government as they possessed to the districts rapidly filling up with people in the outer ring round London. Nothing was required more urgently than the blessing of settled government to those nearly ungoverned parts. So much of London as already had separate governments of their own, even if not the best in form, required far less to be consolidated and brought together than did the outer districts to be given good local authorities. They must not forget that the effect of mere consolidation of present vestries would simply be repeating what had been done in the city, and they would be attempting to crystallise as London an area which the population would not be restricted to. If they were to look forward to anything like a seven million population in the present metropolitan area, and four millions outside of that, namely eleven millions altogether, London government would prove a still harder nut to crack, especially if it was to be attempted on the lines of a single absolutely consolidated government, than ever had been contemplated by the authors of the plan which had been placed before them. The increase of taxable property which had been referred to in debate beyond the houses needed for the new population, was due very largely to the class of property erected in the place of houses removed for improvements, which had in almost

every case been of higher value. The increased rents and higher level of assessment tended to give rateable value. He did not think the real increase had been at all commensurate with the actual increase of burden if the debt incurred for various improvements was taken into account. He would ask whether in their comparative statistics certain parishes were not affected as to density by the accidental congregation of people in hospitals, workhouses, and such like buildings, especially as these were built further out of London in the less populous districts. On the whole he was sure they owed a great debt of gratitude to Mr. Price-Williams for the immense trouble he had taken with this paper, and the very successful innovation he had made in the mode of preparing his coloured diagrams.

Mr. Stephen Bourne wished to add a mite of additional praise to the author of the paper for his very valuable paper and diagrams, and also for the ingenious speculation which he had entered into with regard to the future increase of the population. He thought, however, that there were symptoms that the growth of London was not likely to proceed so rapidly as it had done, because the increased facilities of access for food and other supplies which had tended to increase the population, had likewise a reflex action in giving facilities for going out of London, and particularly for carrying on beyond the city a large number of manufactories and sources of employment which had hitherto led to crowding. Besides this, the increase of taxation was a very strong reason why everything which could be done out of London should be carried outside instead of being done within its borders. The increase of dock accommodation, particularly in the east end of London, and above all the decrease continually taking place in the demands upon industrial occupations for the supply of foreign countries, must necessarily lead to the extradition of a large proportion of the population. He thought therefore it would be unwise to calculate upon the continued growth of London, and so to institute improvements, and burden the property already existing with rates and debts, calculating upon a progressive increase of value in the future which was not likely to be realised.

Mr. Price-Williams in reply said the question of the exclusion of open spaces had been considered by him: the district of Kensington for instance included a large area of that kind, which he had in the first instance excluded; the results obtained were however misleading, and moreover there was no means of ascertaining whether the area of the park at the beginning of this century was the same as it is now; this and other reasons had decided him to include the area of open spaces in this and other cases, in order to arrive at any reliable conclusions as to the changes which had occurred in the population of different districts during the last eighty years. Having regard to the demands now made for more open spaces in the metropolis, it was necessary in preparing any estimate of the future maximum density of the population in some of the suburban districts to make full allowance

for these open spaces being provided, and in this respect the present condition of the population in Kensington district might be taken as a guide. The population in this district at the date of the last census had reached an average density of nearly eighty people per acre, which as a decrease had already occurred in one of the sub-districts, might he considered be taken as representing about the maximum density attainable in all suburban districts with a similar class of residences if provided with open spaces. With regard to the diagrams showing to scale the relative proportions of the populations of London, Liverpool, and Manchester, he could only reply to the objections raised by Dr. Longstaff and Mr. Noel Humphreys as to the fairness of the comparison, that they were in each case drawn to exactly the same scale, both vertically and horizontally, and that the rates of increase were also drawn to the same scale. In answer to Mr. Noel Humphrey's objection that he had not taken into account the increase in the outlying districts outside the boundaries of Liverpool and Manchester, he would point out that he had similarly excluded the districts outside the metropolitan registration area. He quite saw the force of what Professor Leoni Levi had said as to the need of taking into consideration in any estimate of the future increase of the population of London, its relation to that in the provinces, and he must admit that he had not done so. As to his forecast of the future population of London, he of course was aware that any estimate must necessarily be of a somewhat speculative character, and that many unforeseen circumstances might occur to interrupt its growth; but looking at the outline of the population from 1801 to 1881, as shown by the diagram, it was obvious that without the continued operation of some great disturbing cause, such as had never been experienced during the last eighty years, there was nothing to prevent the continued growth of London as indicated by the regular outline of the curve on the diagram; and having regard to the fact that the present population of Paris has twice the average density of London, there is nothing unreasonable in expecting that in 1927 the population included within the limits of the present metropolitan registration area will have reached about 7 millions, and a maximum density approaching to that of Paris at the present time.



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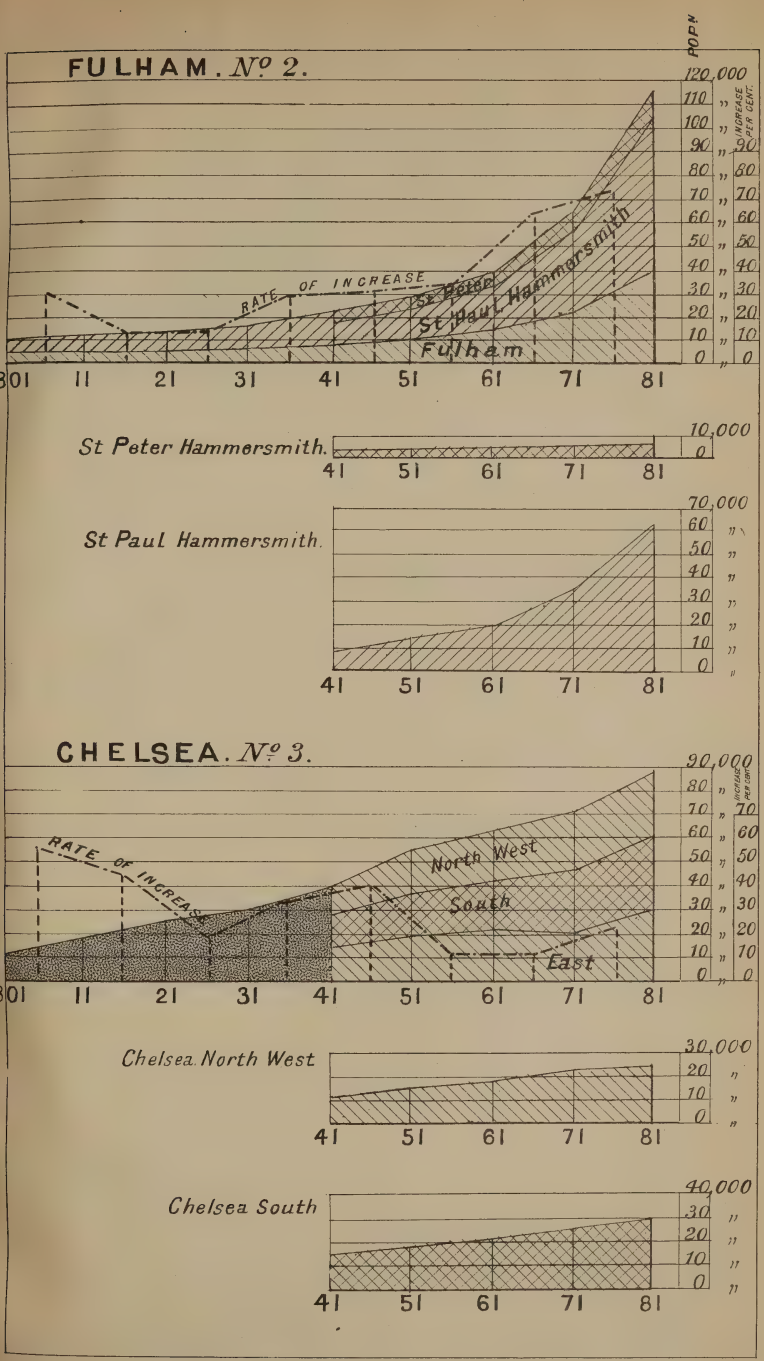

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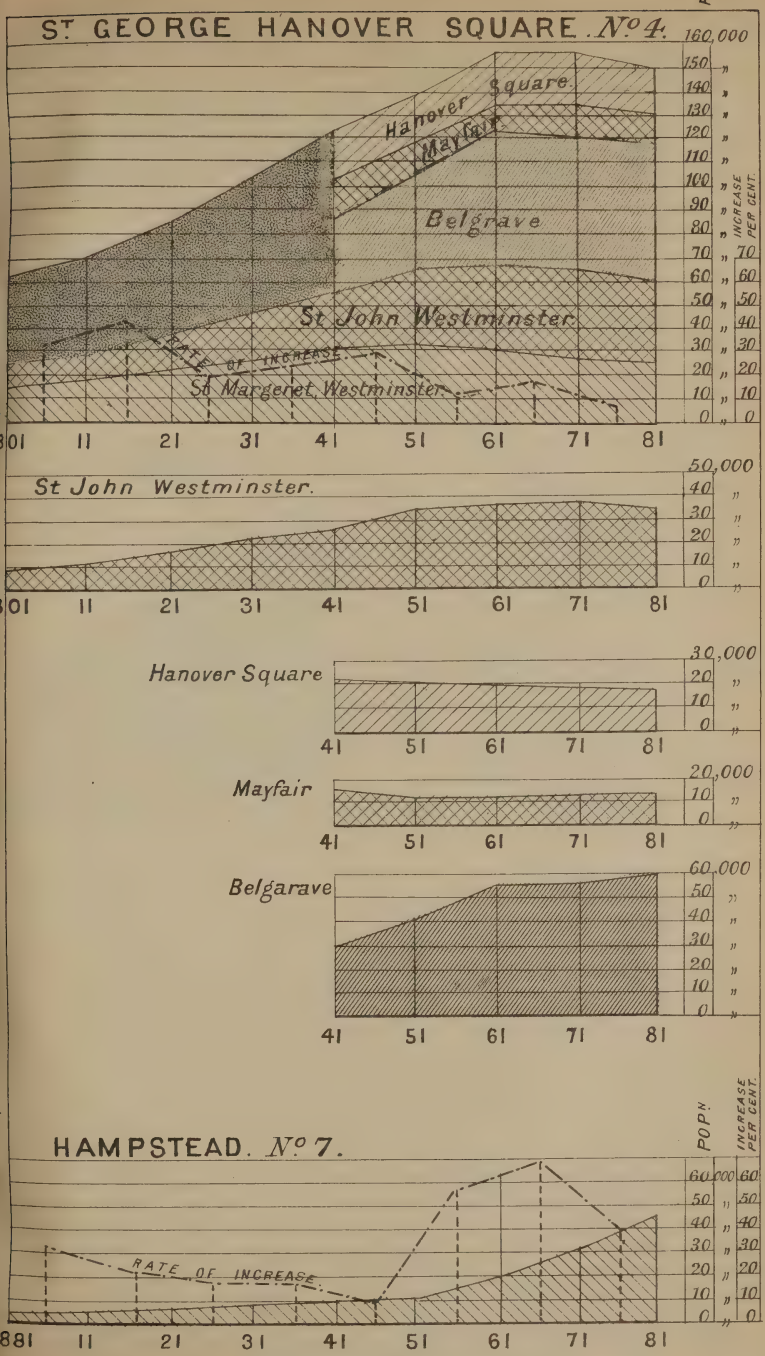

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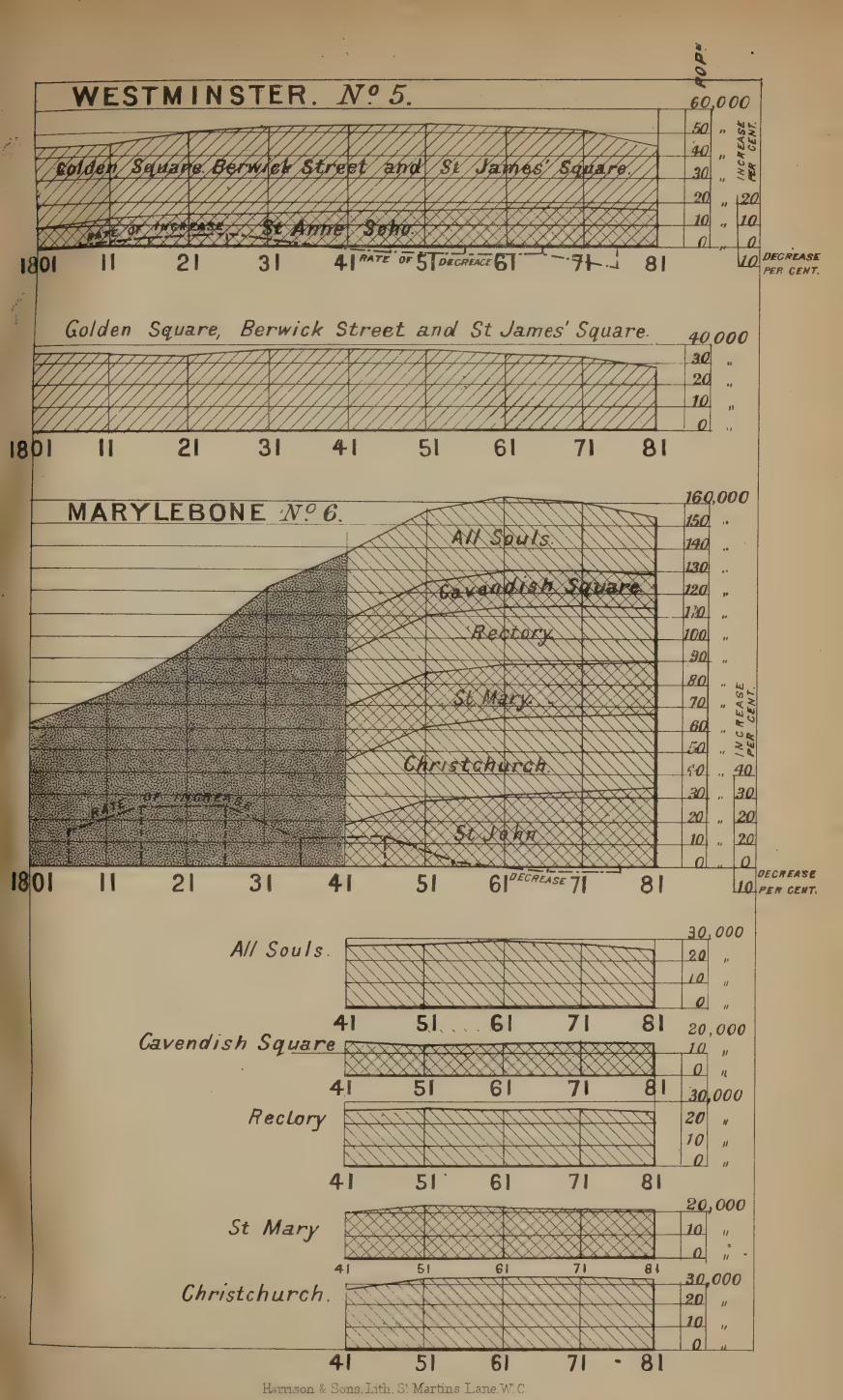

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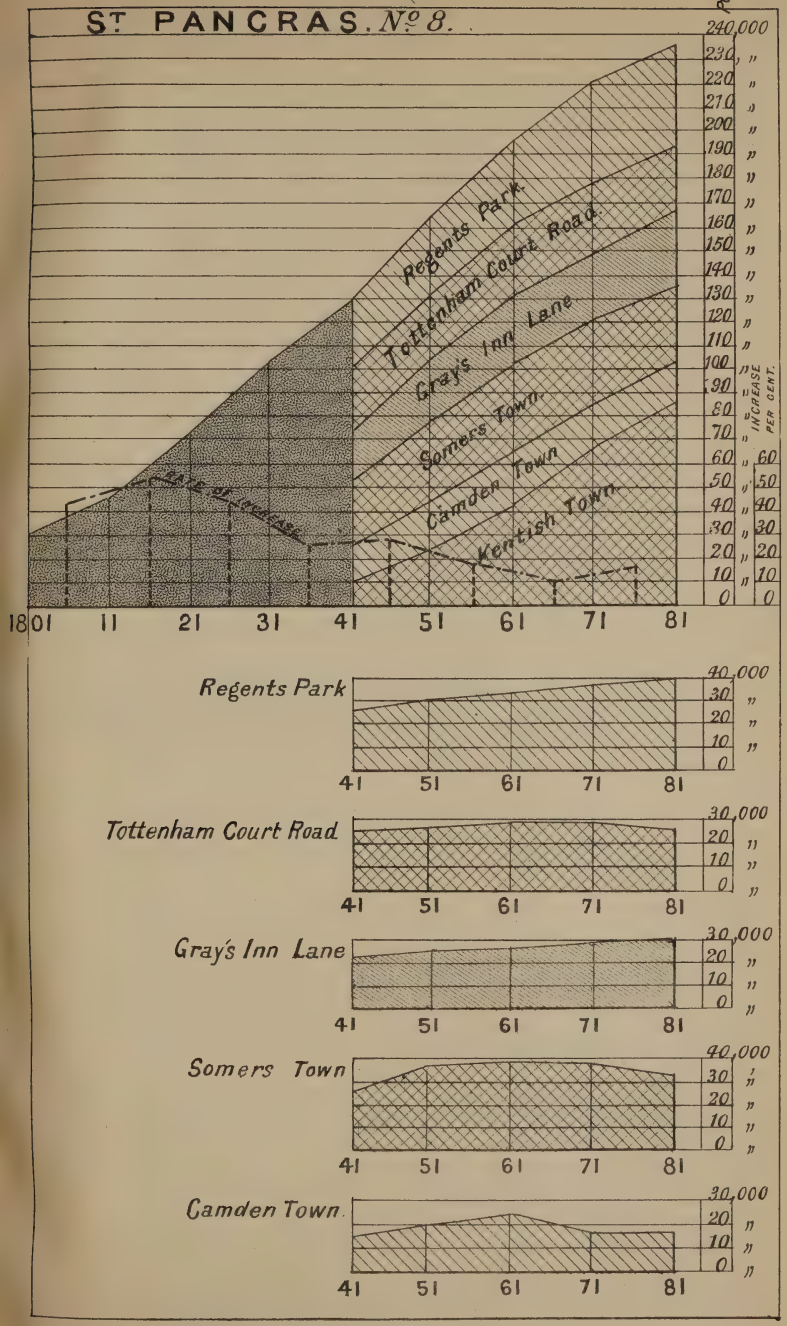

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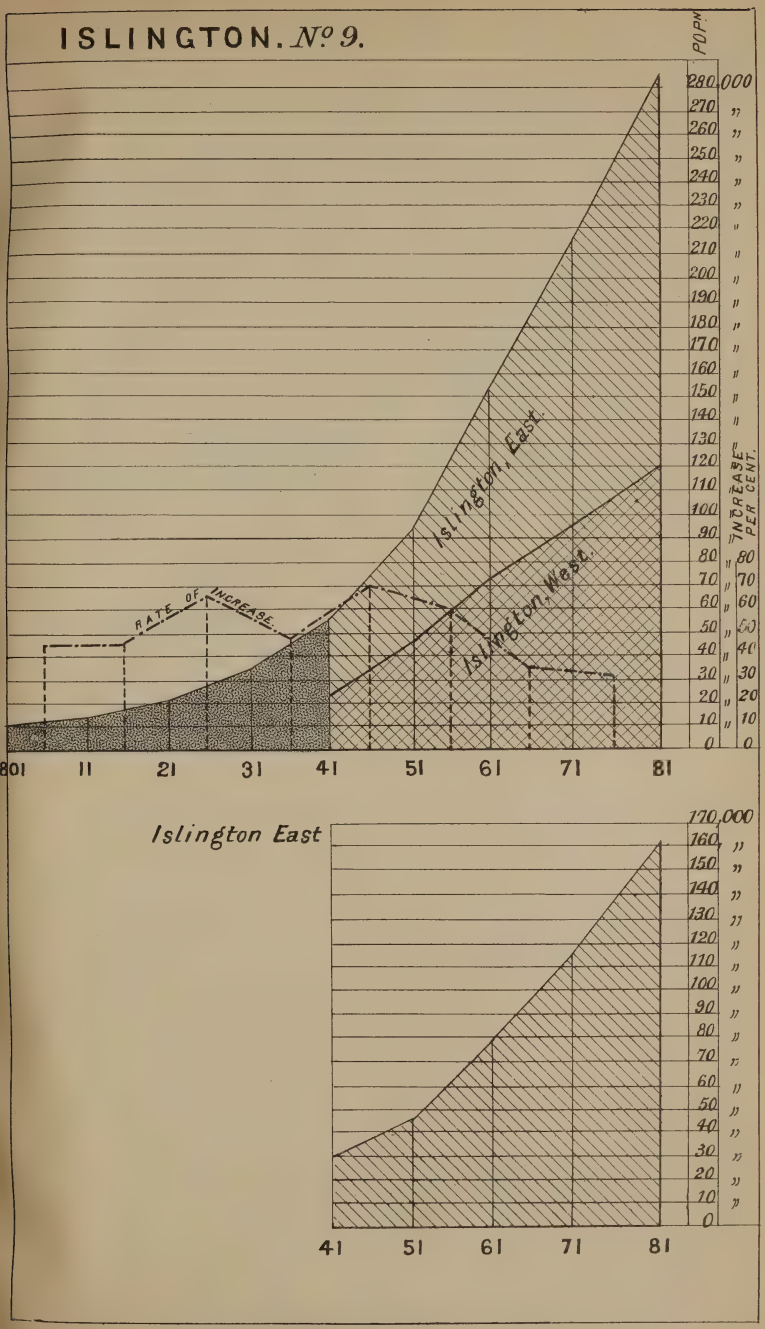

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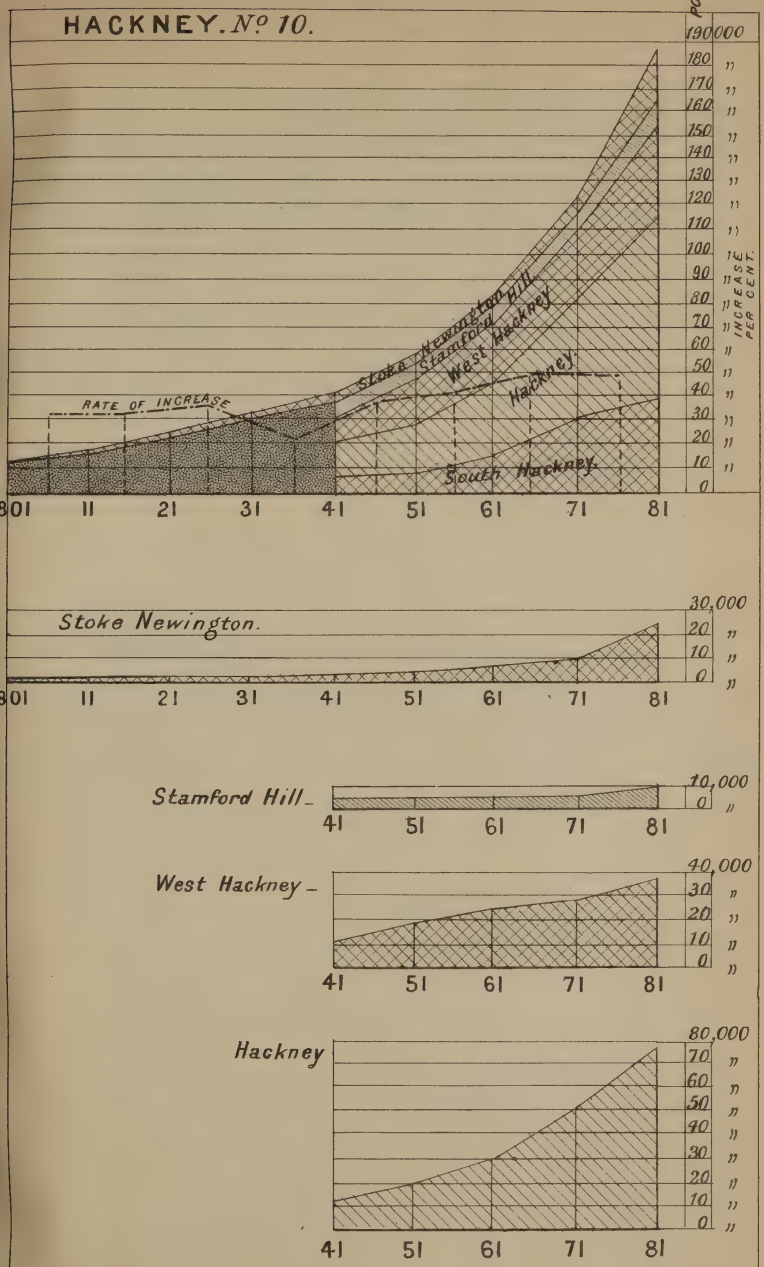

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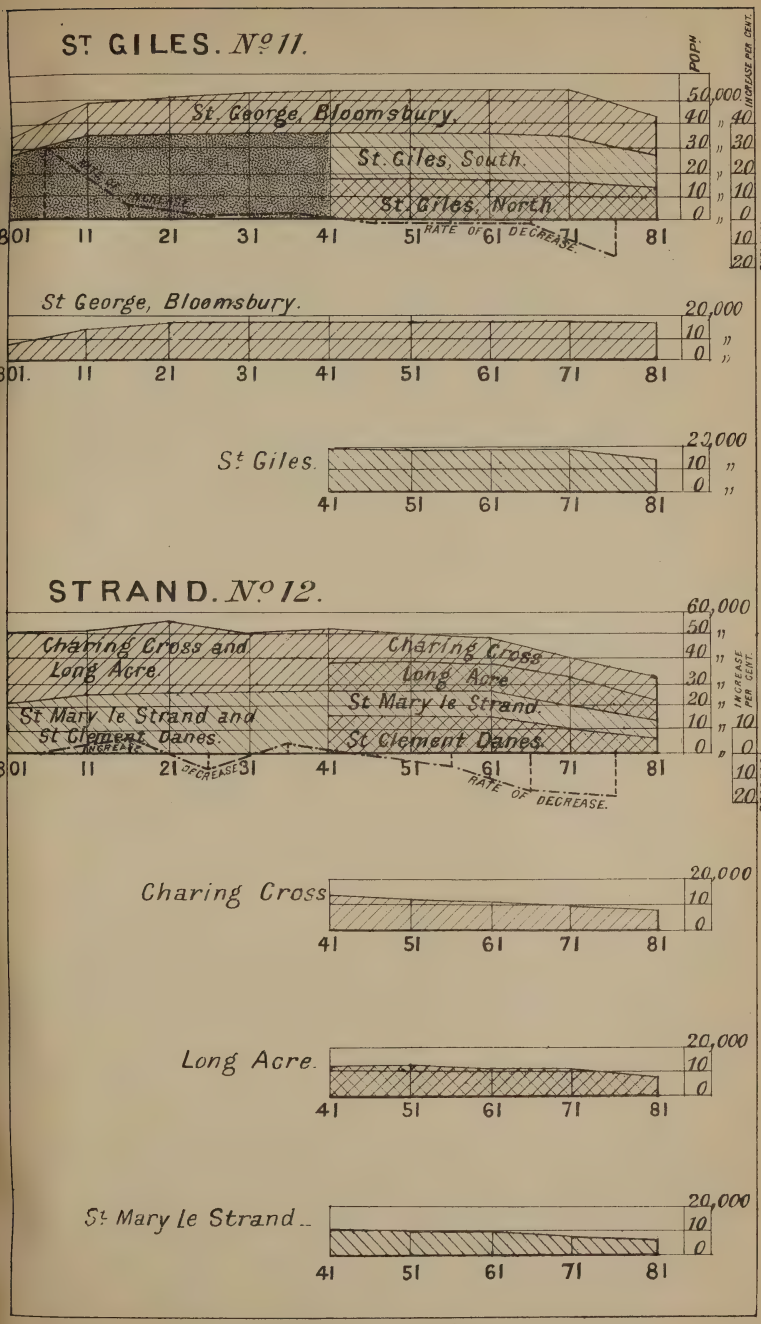

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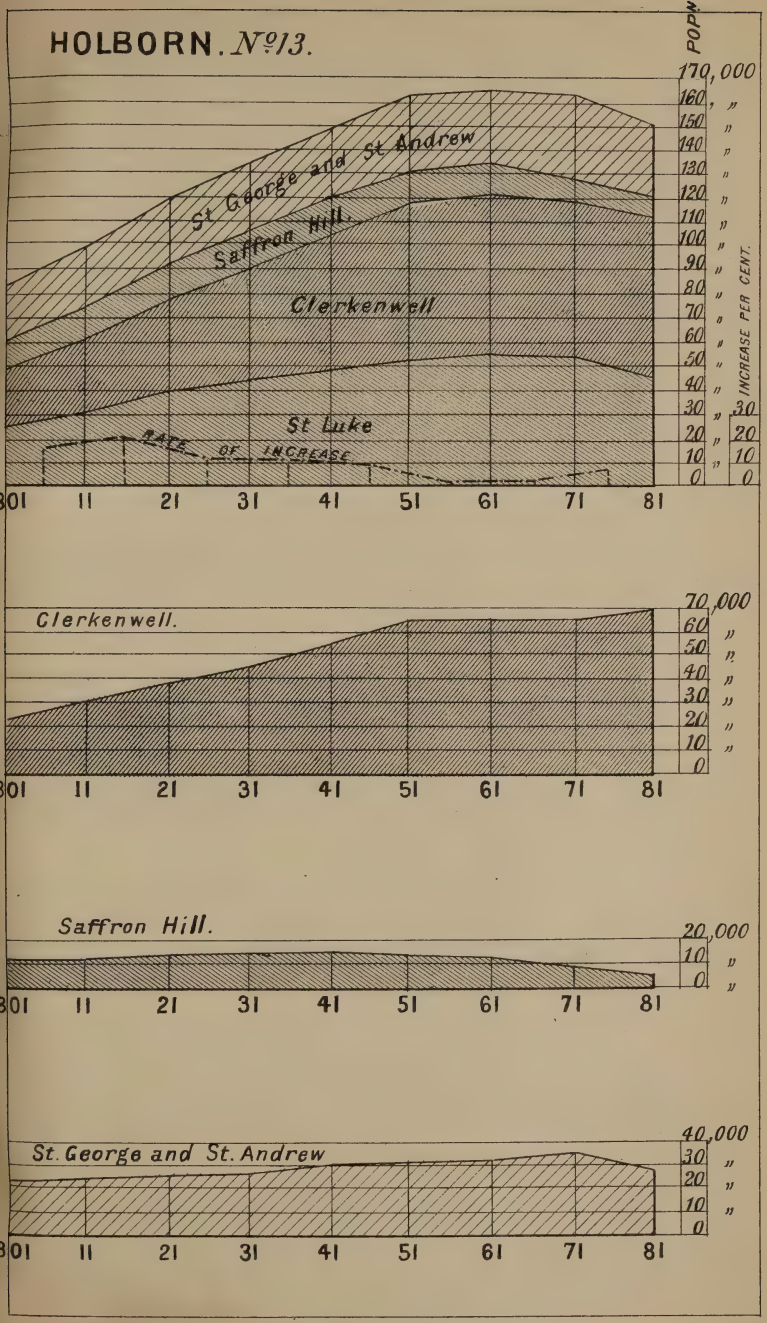

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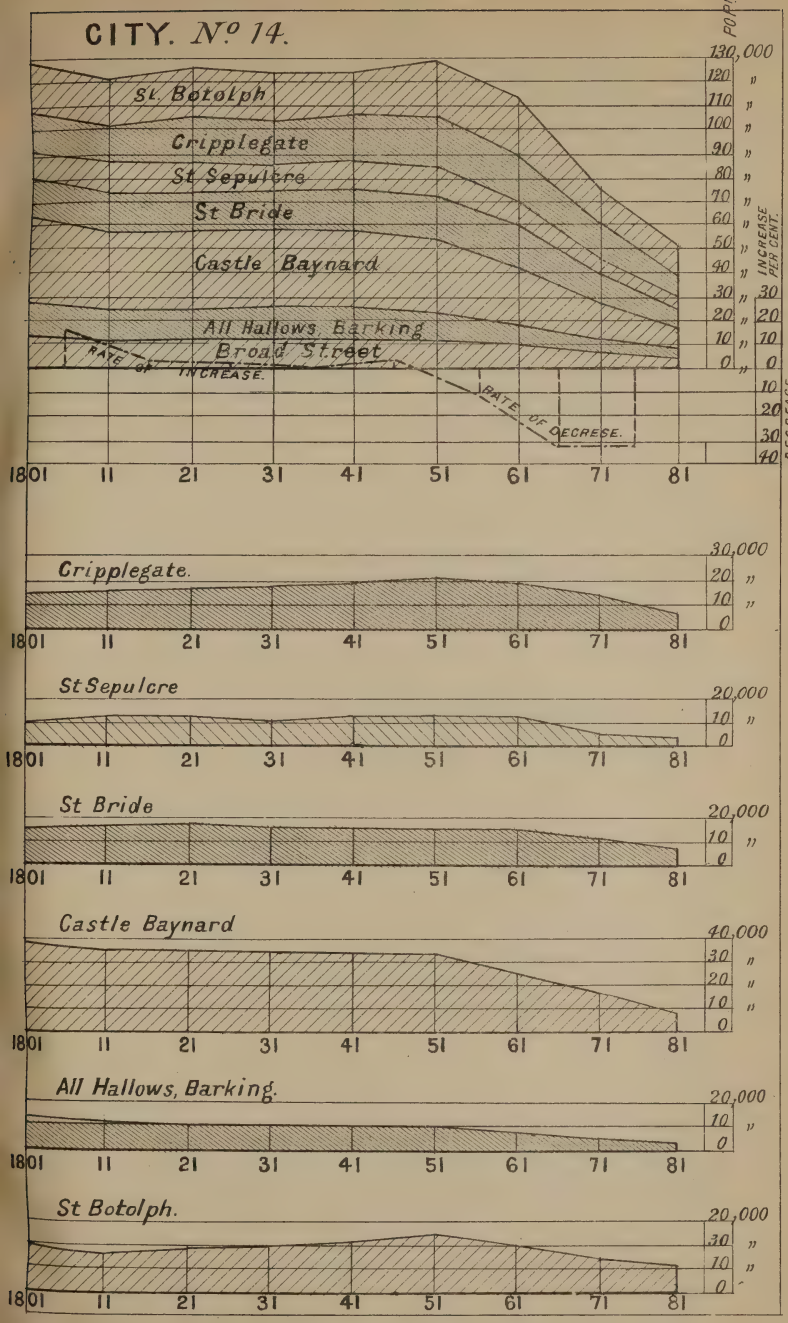

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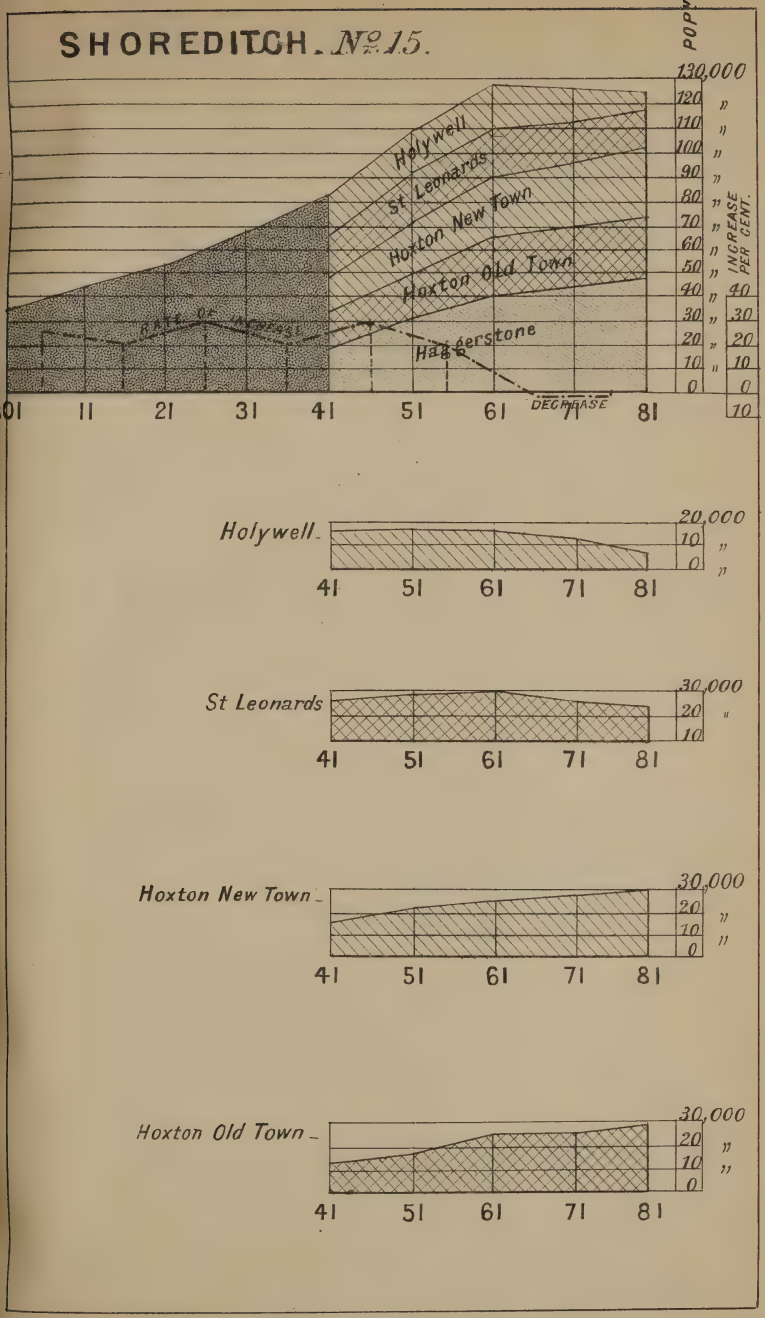

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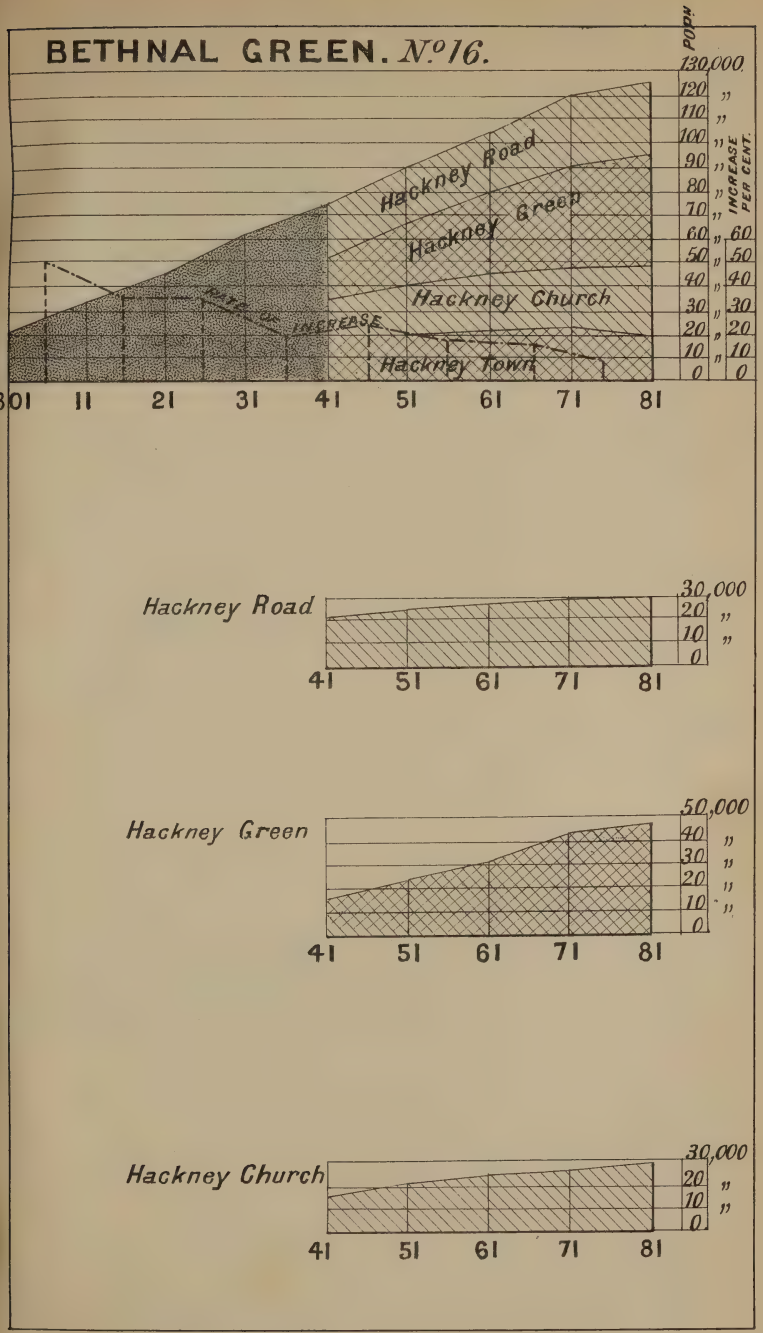

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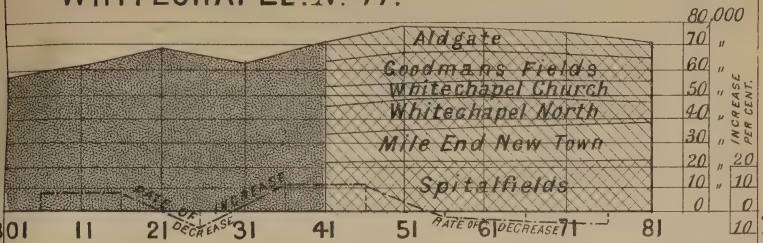

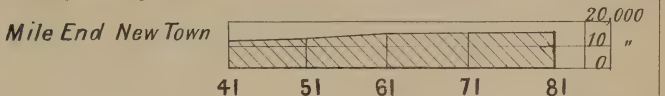

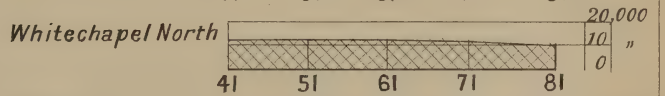

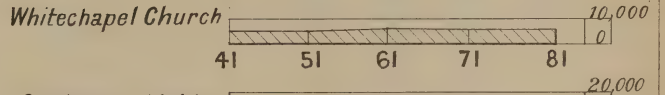

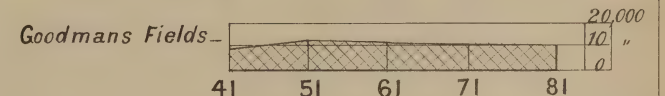

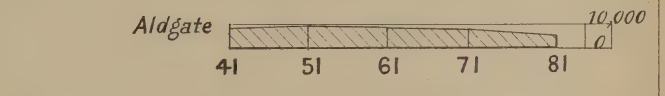

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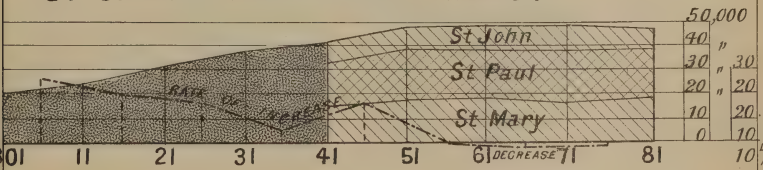

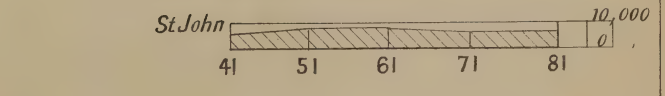

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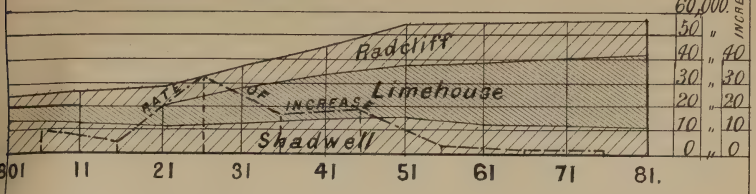

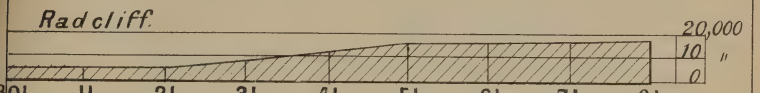

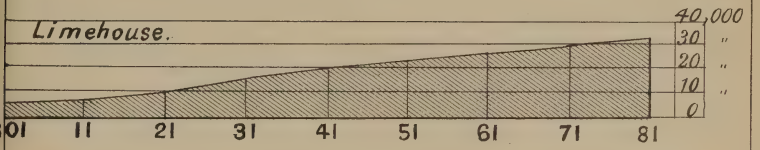

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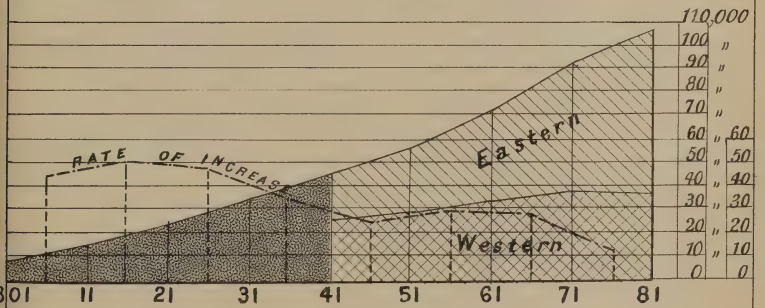

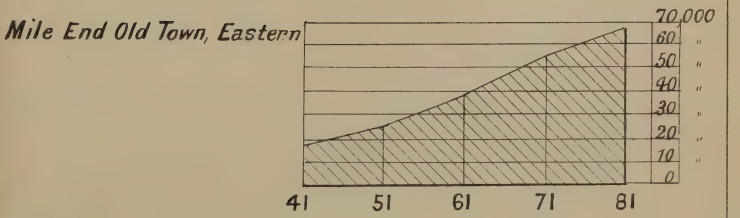

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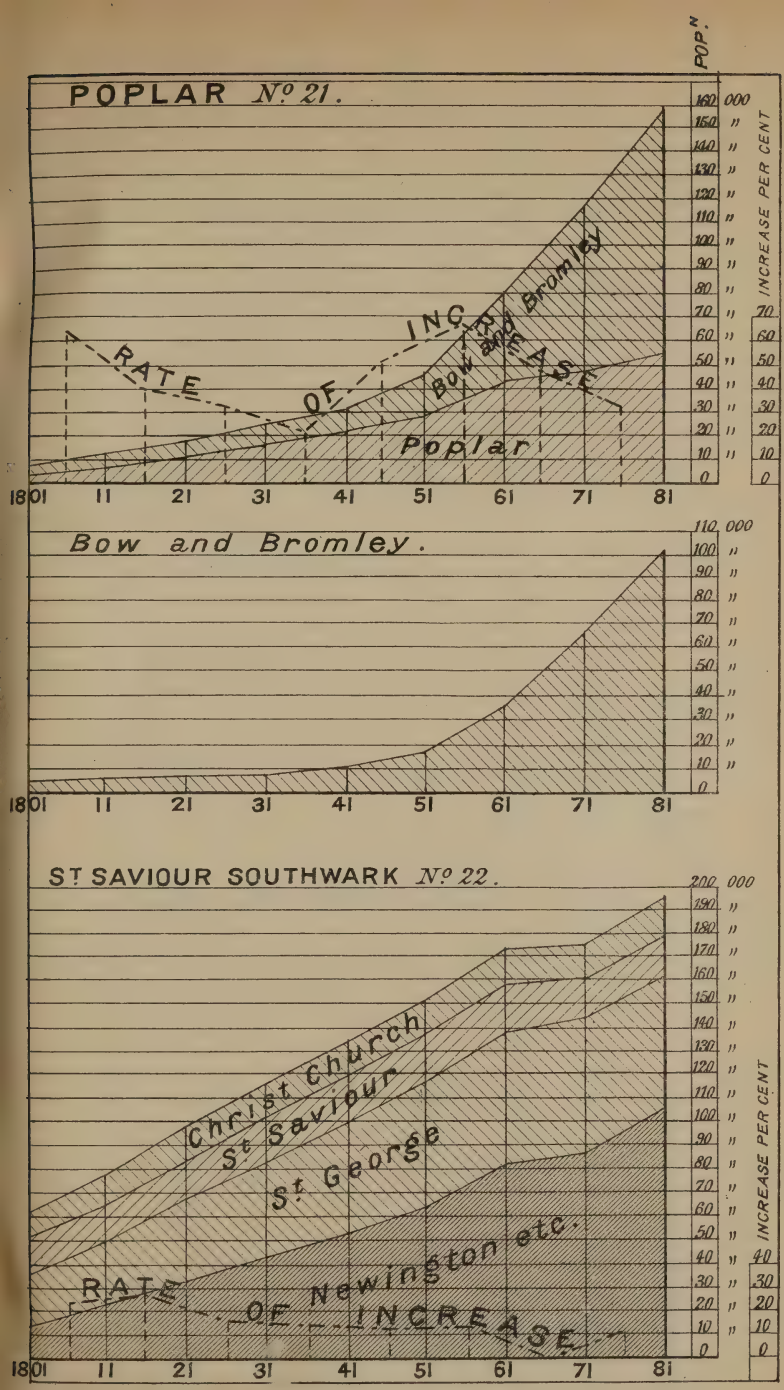

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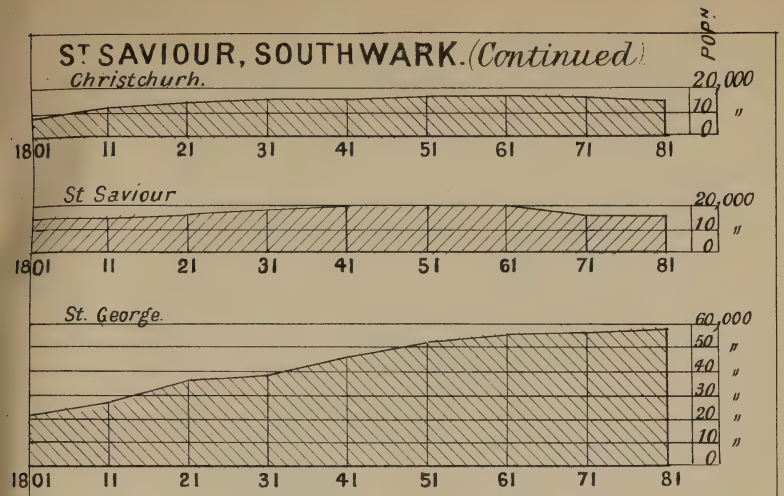

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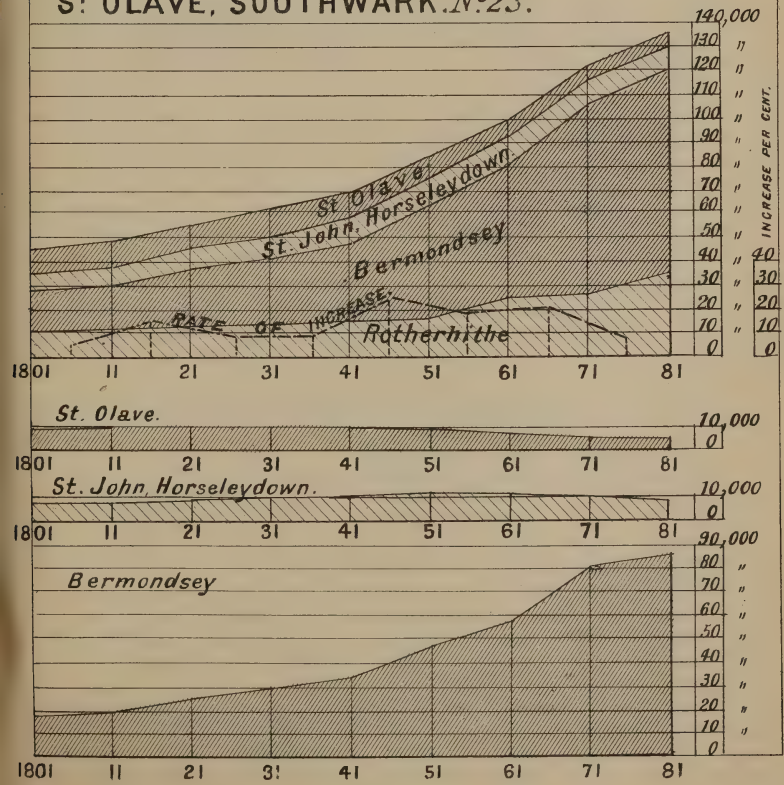

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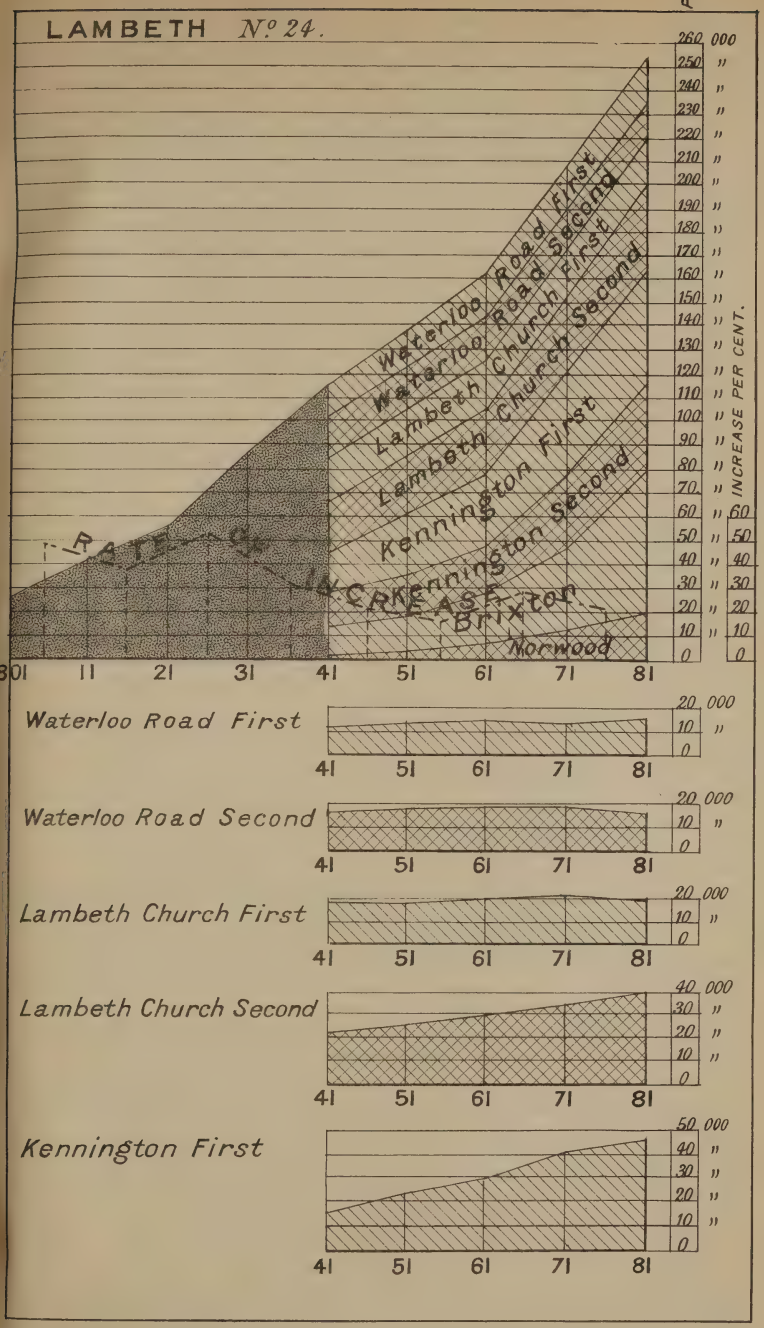

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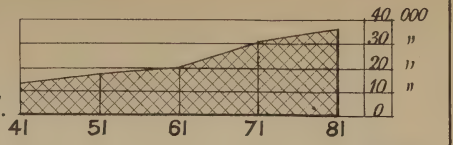

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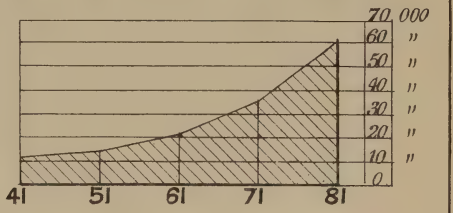

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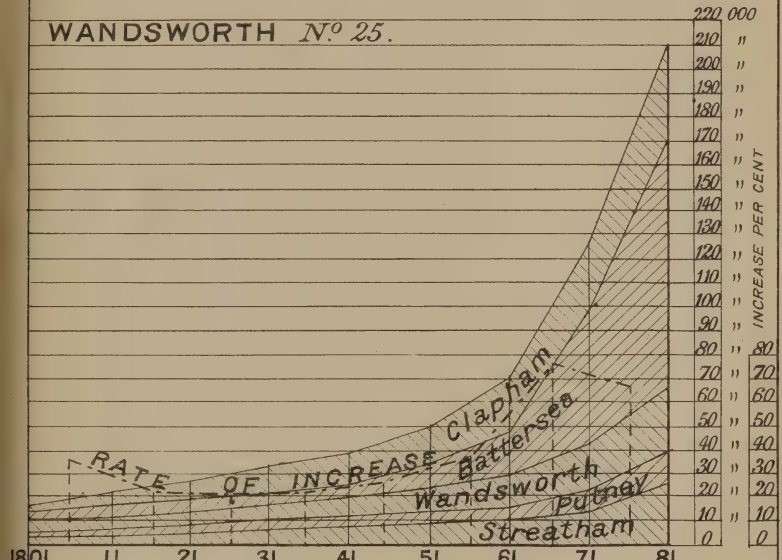
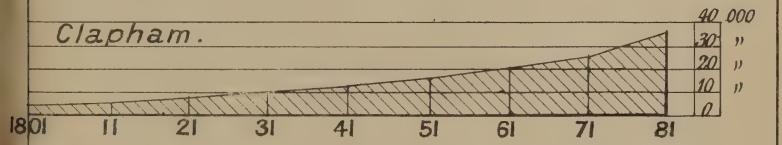


Clapham.



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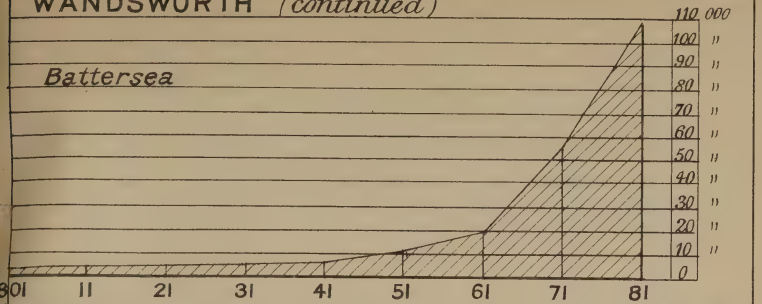
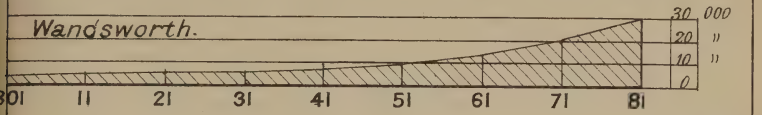
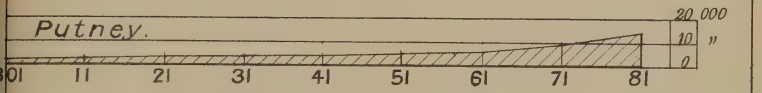
WANDSWORTH *(continued)*







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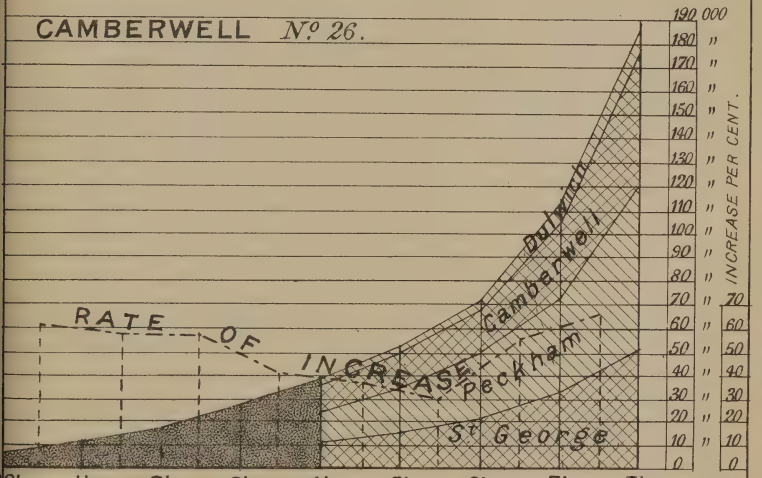

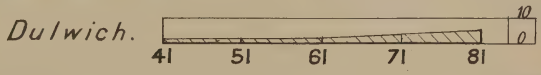

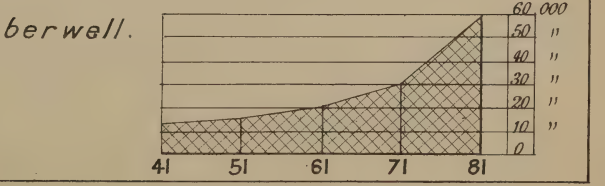

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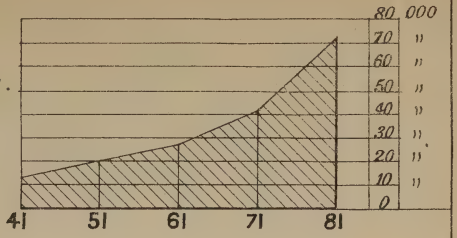
CAMBERWELL
(continued)

Peckham.



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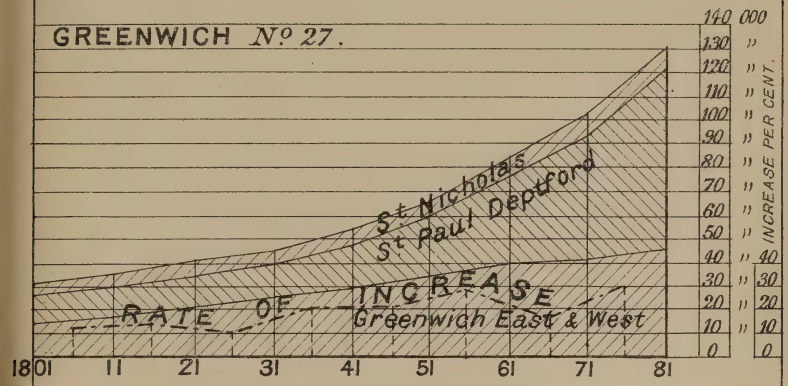

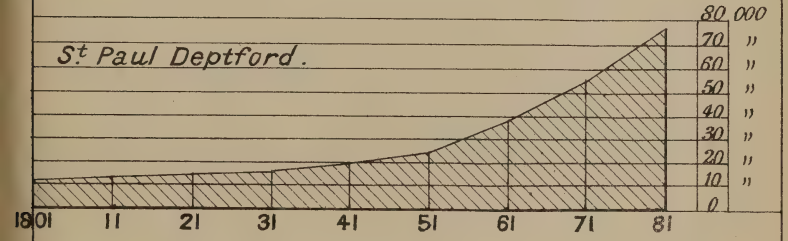

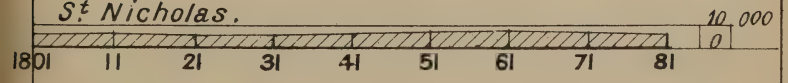

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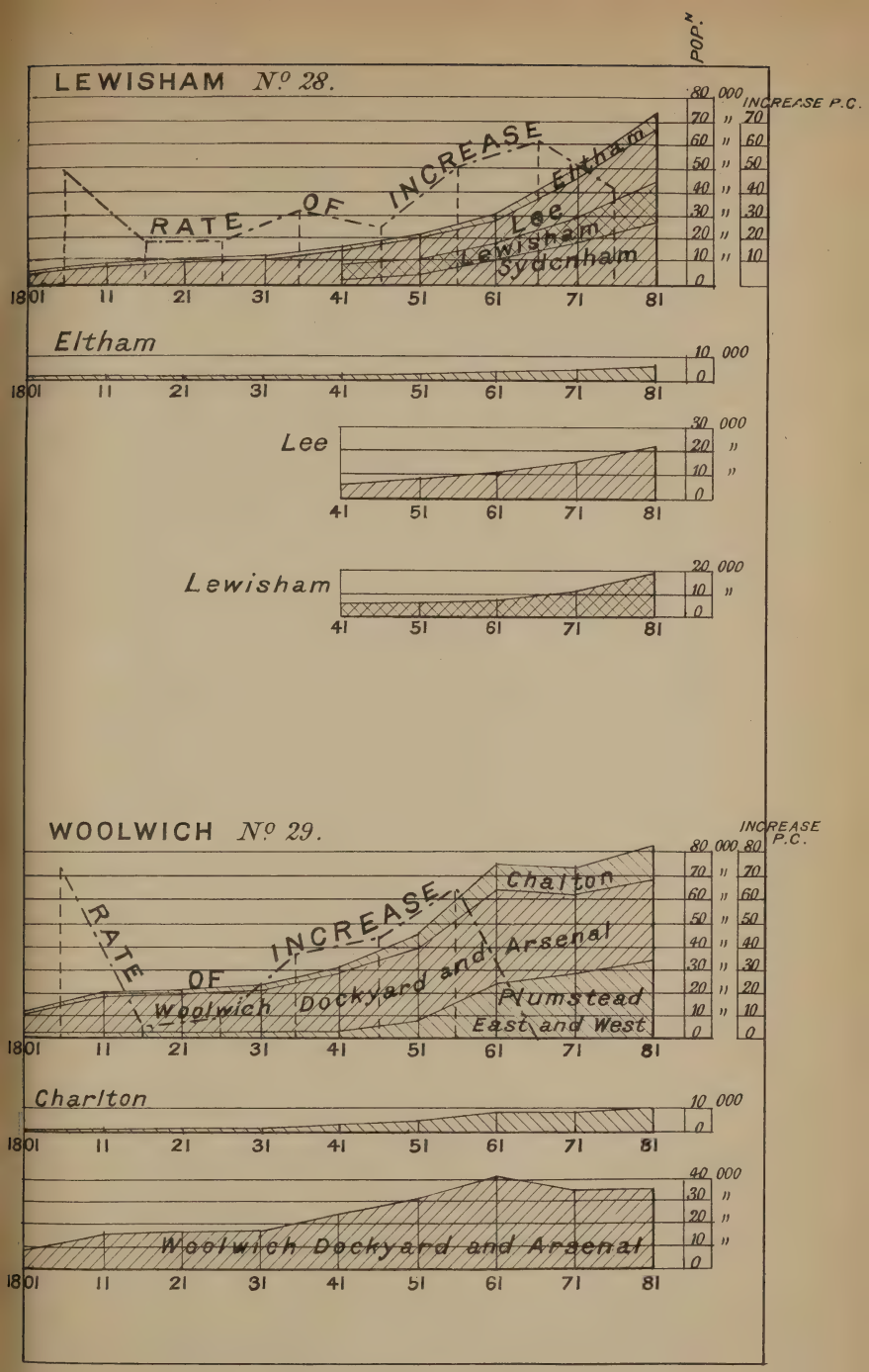

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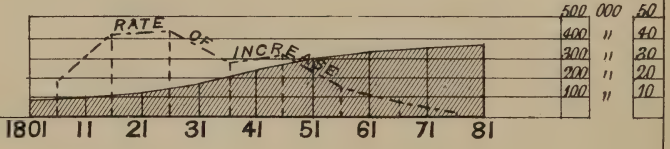
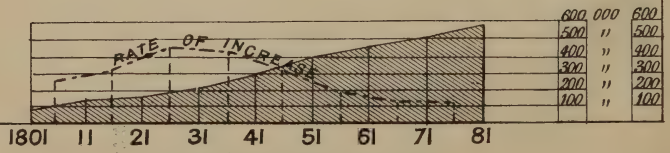
MANCHESTER



LIVERPOOL



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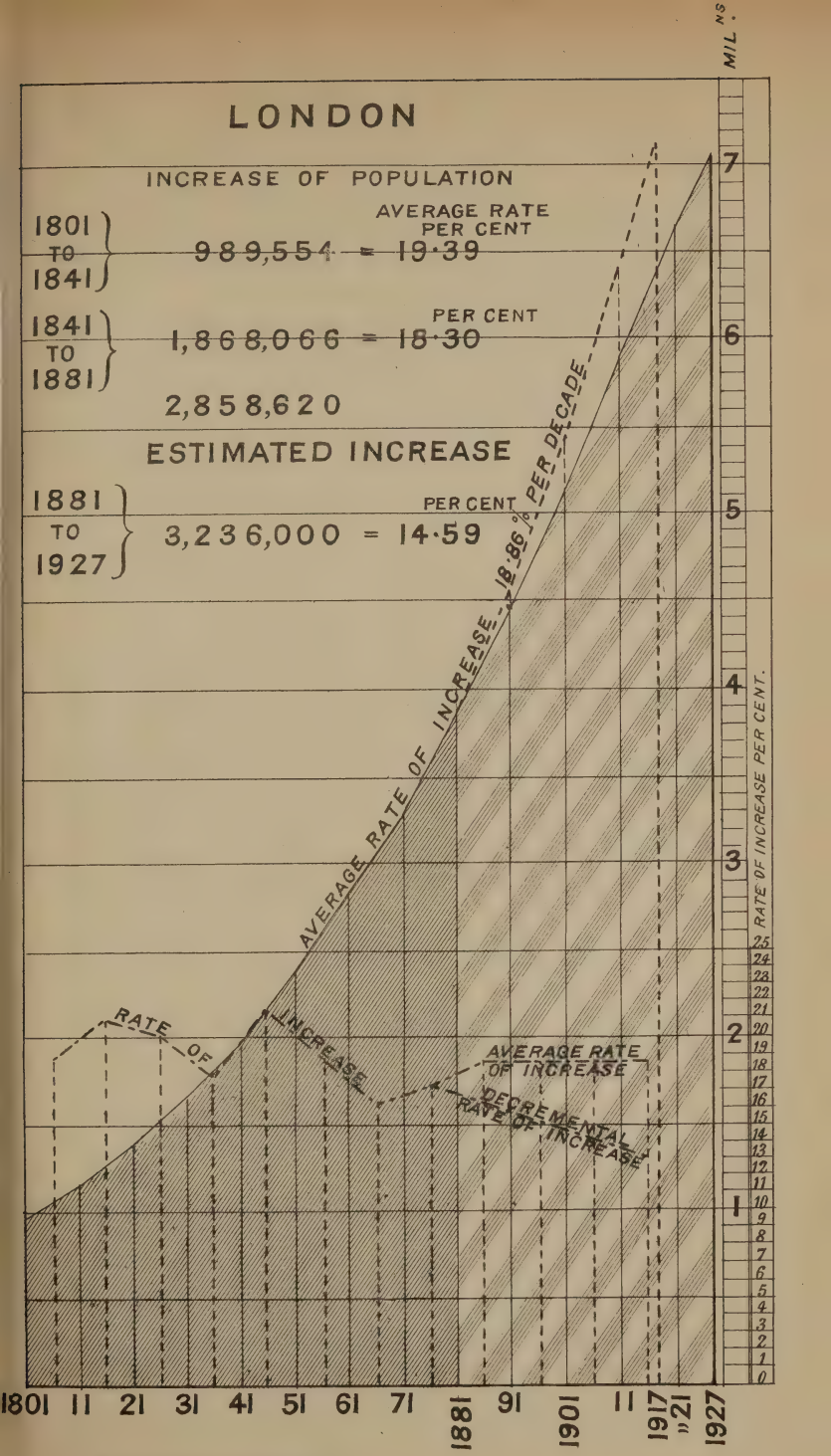
LONDON
INCREASE OF POPULATION
AVERAGE RATE PER CENT
1801 TO 1841 } 989,554 = 19·39
PER CENT
1841 TO 1881 } 1,868,066 = 18·30
2,858,620
ESTIMATED INCREASE
1881 TO 1927 } 3,236,000 = 14·59
PER CENT
AVERAGE RATE OF INCREASE 18·86 % PER DECADE
RATE OF INCREASE
AVERAGE RATE OF INCREASE
DECREMENTAL RATE OF INCREASE
MILNS
RATE OF INCREASE PER CENT.
1801 11 21 31 41 51 61 71 1881 91 1901 11 1917 "21 1927

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Recent Legislation *and* Economic Science:

The Newmarch Memorial Essay.

" *On the* Extent *to which* Recent Legislation *is in* Accordance
" *with or* Deviates *from the* True Principles *of* Economic
" Science; *showing the* Permanent Effects *which may be*
" *expected to arise from such* Legislation."

The Editor has received from the author, Mr. William Watt, the following summary of the "Newmarch Memorial Essay," with prefatory note:—

(*Prefatory Note.*)

The name and works of William Newmarch require no memorial essay or cenotaph to keep them in remembrance; they will live and be cherished with respectful gratitude as long as political economy continues to be cultivated. While he lived and laboured he was, more than most of his contemporaries, a great if for the most part unseen force, influencing in no small degree the thoughts of others, and at several points leaving his impress on the course of legislation. As a most acute and painstaking observer of the phenomena of business, and still more perhaps as a luminous and impressive expositor of economic truth, he acted powerfully on those who shape opinion and make our laws. Like other men of a philosophic cast of mind, he cared much for the explanations of which phenomena are susceptible, but the phenomena themselves—the facts—interested him hardly less. In one of his best known addresses he remarked that probably the most conspicuous fact in the history of economic science during the preceding thirty or forty years had been the change that had come over the method in which it was pursued. "We have learned," he said, "that in all questions relating to human society, in all "controversies where the agencies of human beings is to be relied "upon for working out even the smallest results, the only sound "basis on which we can found doctrines, and still more the only "safe basis on which we can erect laws, is not hypothetical deduc-"tion, however ingenious and subtle, but conclusions and reasoning "supported by the largest and most careful investigation of facts." Again and again in his published writings, and not less emphatically and persistently, I believe, in his unrecorded utterances, he insisted on what he regarded as the cardinal truth that political economy,

following in the wake of the ancient physical philosophy, must more and more leave behind its *à priori* abstract and deductive character and become a science of observation, experiment, fact, and induction. This involves the function of the statist. Mr. Newmarch was a great statistician as well as a great economist; he did more than any other master in these departments of human pursuit, with the exception it may be of his eminent predecessor and preceptor, Thomas Tooke, to render statistics the efficient ally and servant of economic science. The claim of political economy to rank as an experimental science rests entirely upon the services of statistics, or rather upon the results which it is the business of the statistician to collect, classify, and set forth in the simplest and clearest form; and Mr. Newmarch's genius for statistics enabled him, in conjunction with his familiarity with the principles and details of commerce and finance, to deal with economic questions in the true inductive and scientific spirit. Some years before his powers as an economist were revealed to the public in the two last volumes of the "History of Prices," he had done some first-rate statistical work; he had carried out his inquiry into the circulation of bills of exchange, and his exhaustive examination of the financial aspects of Pitt's war loans, and had cast some gleams of light into the prevailing darkness as to the effects of the gold discoveries. His preparatory work as a statistician was well fitted to strengthen that passion for exact knowledge which can be traced all through his writings. In dealing with the history of prices he had to discuss all the economic movements of a peculiarly eventful time, including those flowing from free trade, Peel's banking legislation, the gold discoveries, and the development of the railway system, as well as many matters connected with the political transformations and economic condition of foreign countries. With all these questions his powerful and original mind was perfectly at home, and the pre-eminent merits of the book were no less conspicuous in the masterly expositions of theory and principles than in the skilful methods by which statistical data were made luminous and instructive in relation to economic doctrine. To mention only one great subject of controversy, Mr. Newmarch, along with Mr. Tooke, maintained, in opposition to Lord Overstone and the "currency school" with which Peel identified himself, that it is variations in the rate of interest and not any changes in the mere volume of the circulation of convertible bank notes that affect credit, influence prices, and act on the foreign exchanges, and that consequently much of the legislation of 1844 was founded on error as well as pernicious in operation. The conflict between the "currency" and "free banking" parties was of long duration, but later in life Mr. Newmarch was able to point to the establish-

ment of the conclusion for which he had contended as "one of the "most striking instances in economics of apparently clear results "of mere deductive reasoning being corrected by careful induction "drawn from observation and facts."

Mr. Newmarch had unbounded faith in the future of political economy as a science affording practical guidance to communities, and looked forward to an ultimate reaction from the tendency at present manifested in many quarters to lean upon Government. He had full confidence in the free play of human interests and desires within the limits prescribed by the positive laws of a well-ordered State, and held that those laws should interfere as little as possible with the operation of natural forces, and especially should not weaken the absolute conviction in men's minds that they would enjoy the full fruits of success and suffer all the consequences of failure. The present Essay is concerned with matters inviting consideration, at every turn, of the proper functions and duties of government. Its leading aim is to examine the legislation of recent years in the light of economic principles, those principles of which Mr. Newmarch was one of the best exponents; but it has been framed without more direct reference to his teaching than is implied in the application of the spirit of his philosophy to the facts with which I have had to deal, and is in no sense to be regarded as under the ægis of his authority. Mr. Newmarch's confidence in the wide sufficiency of political economy led him to desire and expect that the sphere of Government action would in the future be restricted within narrower and narrower limits. He held that "every human being is entitled to justice, protection, freedom of "thought and action, and to such a measure of instruction as will "suffice for the intelligent use of his limbs and faculties," but from the State nothing more. Though too wise a man to hold the *laissez faire* doctrine without considerable qualifications, he was yet reasonably jealous of every encroachment of the State upon individual freedom. The Factory Acts he held to have been justified on the ground of the health, physique, and education of the young. "I "need not tell a Lancashire audience," he said, in his address at the Manchester Meeting of the British Association, "speaking after "many years' experience of the ten hours' legislation, that the "results are something of which all parties may well be proud;" it had done much to consolidate the social fabric, to clear away a mass of depravity and discontent, and to confer upon us resources against the effects of foreign competition. This and similar admissions, however, detract nothing from his clear perception of the sufficingness of economic conditions within a very wide area. "The world," he wrote on another occasion, "has got rid of a "good many intermediate agencies, all of them supposed originally

" to be masters, where in truth they were less than servants. The " rain and the sun have long passed from under the administra- " tion of magicians and fortune tellers;" and "commerce has " cast aside legislative protection as a reed of the rottenest fibre." How greatly commerce had benefited by its liberation he showed in a brilliant paper—his last—read before the Statistical Society in 1878, establishing by a demonstration, exhaustive and complete in every part, that the predictions of the philosophers and the anticipations of the statesmen as to the results of free trade had been uniformly fulfilled in the most striking manner. One of the tables accompanying this paper compares the trade of four great protective countries with that of the United Kingdom; and in a well known article on the respective influences of free trade and improved locomotion on the progress of wealth, Mr. Gladstone described his task in writing it as merely "supplemental and " auxiliary" to this valuable table drawn up by Mr. Newmarch. And here it may be remarked that Mr. Newmarch always expressed regret at the negociation of the treaty of commerce with France, and that treaties of commerce in general found no favour in his eyes. As little could he brook interferences of the Government with domestic trade and industry. " A pervading and meddling Govern- " ment," he once said, " means a wilderness of functionaries and " an apparatus of certificates, formalities, reports, and signatures, " which of themselves fill up an average life. This is not freedom, " but functionarism, and the radical vice of all functionarism is " the absence of any adequate motive of personal gain or loss. " Nations have been frequently enough killed by functionarism, " but never created or advanced by it." He maintained that it is just because this nation has, on the whole, striven to reduce the functions of Government to a minimum that it has become so robust and free. Schemes of land nationalisation and the like found in him an uncompromising, not to say contemptuous opponent, and there is nothing in his published writings which lends the slightest countenance to the principles underlying much of the recent land legislation for Ireland. The fundamental doctrine that the true policy of the legislature is to leave its subjects to become rich in their own way, under as few restraints as possible, has been maintained and enforced by no economist of our time with more resourcefulness in argument and consistency of purpose than by Mr. Newmarch. He frankly conceded, and even strenuously affirmed, such qualifications of the doctrine as seemed to him necessary; but with him there was no loss of clearness of vision or surrender of the plain teachings of political economy under the influence of prevailing incitements to over legislation. On the contrary, his latest utterances are, if possible, more

trenchant and specific than those of earlier date in their warnings against the mischiefs that inevitably flow from every improper or unnecessary inroad of legislative authority upon the domain of individual freedom and natural law.

(*Newmarch Memorial Essay.*)

[The main portions of the Essay are given in abstract, details being much abbreviated or omitted.]

Economics and Legislation.

Political economy has of late years fallen somewhat into undeserved disrepute as a basis of legislation, and statesmen recommend their measures on quite other grounds than that those measures carry out or are in harmony with sound economic principles. Stress is laid rather on moral or on political considerations, and the State, with the sanction of its legislature, and through the instrumentality of its executive, is ever undertaking new functions of supervision, regulation, and execution. Within the last quarter of a century or so it has begun to carry on the businesses of banking, life assurance, telegraphy, and carriers of parcels. Inspection has been developed and extended in relation to mines, factories, and ships; it has been carried into workshops, brickfields, retailer's shops, the farmer's fields, and even private dwelling houses. Public companies, ship builders, owners of land and houses, employers of labour, parents and guardians, to say nothing of persons engaged in special trades, such as publicans and pawnbrokers, are all increasingly looked after by public officials. Innumerable regulations have been established with regard to the relations of landlord and tenant, employers and employed, parent and child, the individual and the community. It sometimes appears, indeed, as if the great aim of our law makers were to refurbish in new forms the old theory and practice of protection. Individual liberty is undergoing restriction on every hand, and the ends of social, moral, and even commercial and industrial improvement, are more and more sought to be compassed by acts of parliament. Oppressed and afflicted humanity appeals to the legislator for help, and the legislator, nothing loth, drafts a remedial bill, and by diligent exertion and perseverance gets it passed into law. There is a general obliviousness to the truth that the imperative laws of parliaments and judicial tribunals differ widely in their character and operation from the laws of nature. These are constant, unvarying, and inflexibly impartial in their action, while laws that are the handiwork of the legislature are apt to fail, requiring amendment, extension, or speedy repeal, or lapsing into the comprehensive category of dead-letter statutes.

More than a century has elapsed since Adam Smith defined and demonstrated the law or principle of commercial and industrial freedom, expressed in these familiar words: "Every individual is "continually exerting himself to find out the most advantageous "employment of whatever capital he can command. It is his own "advantage, indeed, and not that of the society, which he has in "view. But the study of his own advantage naturally, or rather "necessarily, leads him to prefer that employment which is most "advantageous to the society." This fundamental axiom of economics applies not only to capital property so called, but to that capital which everyone possesses in his own skill and energy; and it follows, on economic as on other grounds, that everyone should be free to put forth his powers in the manner he deems best for himself, always provided that his action does not interfere with the just rights and liberties of others. Impelled and guided by the strong incentive of self interest, he is far more likely to form a right judgment, and to act with efficiency in carrying out that judgment, than if he surrenders himself to governmental leading-strings. It is the great function of governments to give security of life and property, and to provide for the enforcement of lawful contracts. Beyond this the best service that governments and parliaments can render to trade is to leave it alone. Nevertheless some amount of legal interposition is sometimes necessary in order that the full power of economic law may be brought into play. Thus the farmer in the pursuit of his occupation requires to incorporate with the soil of his farm certain fertilising agencies. These fertilising agencies are in time used up in the crops, but good policy requires that some means should exist whereby on quitting his tenancy the farmer should be able to recover the equivalent of the capital which he has thus legitimately laid out in carrying on the business of agriculture, for without this he will expose as little as possible of his capital to the risk of being taken from him. In this case the intervention of imperative law seems called for in order to afford security of property and protection of rights, and also, on economic grounds, that the farmer may have reasonable liberty of action in the pursuit of his own and the public good.

Nor is Adam Smith's principle of natural liberty all-sufficing. In relation to industry it is subject to limitations that do not apply with respect to commerce; and even on economic grounds legislative action bearing upon the conduct of industrial operations may become necessary or advisable. The most obvious instance of this occurs in connection with the labour of children. Restrictions upon juvenile employment are requisite in order that the future interests of the young, particularly as regards health, physique,

and education, may be secured. This indeed is an economic end in which not only the young themselves but the whole society is interested. Thus the general principle of the Factory Acts and of the health legislation of the past forty years becomes economically justifiable. To raise the standard of public health in a community is *pro tanto* to enhance the industrial resources of that community; and the efficiency of labour is increased by the intelligence which comes of education. It is manifest therefore that legislative intervention is sometimes requisite for the creation of the arena in which economic forces are exercised to best purpose; and thus again legislation and economics go hand in hand in joint factors in some far reaching end of public improvement.

The ultimate test of the economic soundness of legislation is to be found in its permanent effects. The principles of economics are merely generalisations in which the phenomena of the production and distribution of wealth are summed up; they are accredited only in so far as they conform to and express the results of experience and observation. Political economy is not a fetish with mysterious and unintelligible claims to authority; it is the gathered sum of knowledge of the phenomena of cause and effect within a certain well defined domain, and serves as a standard by which legislative acts can be judged. Human action varies within certain limits, just as no two seasons are the exact counterpart of each other. Conflicting motives come into play and sometimes obscure the operation of causes not in themselves obscure. But though the seasons never repeat themselves with absolute uniformity, yet their general course is the same from year to year and from age to age; and so it is likewise with collective human action in relation to the pursuit of wealth.

In the present inquiry the imperative laws of recent parliaments affecting the tenure of land make the first and chief demand upon our attention. Many of these enactments undoubtedly appear, *primâ facie*, to be distinguished by the protective character which pervaded the legislation against which Adam Smith and Ricardo directed their most powerful argumentative artillery. The perennial Irish question, which has baffled successive generations of statesmen, is fundamentally an economic question in which the relations of the people to the land are the most important element. Prior to 1870 two important measures dealing with Irish land were passed by parliament, the Encumbered Estates Act of 1848, the object of which was to facilitate the transfer of landed property from owners overburdened with mortgages and other charges to purchasers who might be expected to incur the expenditure necessary to bring their lands into a condition suited for the successful pursuit of agriculture; and the Landlord and Tenant Act of 1860, which

substituted contract for the remains of feudalism in the relations between owner and occupier.

The Irish Land Act of 1870.

The Land Act of 1870 marks a "new departure" in British legislation. Commercial principles were now abandoned; whole classes of contracts were compendiously declared to be void both at law and in equity; and the novel principle of "compensation for "disturbance," or damages for eviction, was established. So far as Ulster was concerned, the Act did not introduce any fresh deflection from sound economics; it only gave legal effect to arrangements which, however objectionable in principle, were already in active operation, and formed the basis of a large amount of property belonging to the tenants. Under the Ulster system of tenant right the occupier must be possessed of more capital than would be necessary if he had only to stock and till his farm and pay a yearly rent; and to a man of comparative wealth it offers the advantage of security of occupation accompanied by certain of the incidents and pleasures of the sense of proprietorship. This advantage is all the more to be prized by reason of the peculiar social and economic conditions of Ireland, where land is scarce in proportion to the demand for it, and farmers are more numerous than holdings. On the other hand it has to be borne in mind that the market for tenant right in Ulster has derived great support from the manufacture and cultivation of flax. Elsewhere the supply of wealthy purchasers is by no means so plentiful, and if the purchase money had to be borrowed at an interest corresponding to the instability of the security, investments in tenant right would be apt to lose much of their attractiveness.

One of the great defects of the Act was that while it gave legal efficiency to tenant right customs, and extended the doubtful principle of dual ownership, it provided no natural and self acting method of determining the respective proportions of the produce or its price that should belong to the landlord and tenant respectively. In proportion as rent is raised the money value of the privilege of occupancy is reduced, and the tenant who, having paid for the tenant right of his predecessor on the basis of the rent then subsisting, has his rent shortly afterwards raised, is manifestly deprived of a value for which he has paid. Many of the Ulster witnesses before the Bessborough Commission of 1880 laid great stress upon the prejudicial effects of rent raising, which they said had since 1870 been "eating up" the tenant right; and testimony to a like effect was given before the Royal Commission on Agriculture. The large estates of wealthy proprietors were in general low rented, but on the smaller estates competition rents were often exacted.

Especially was this the case on properties purchased in the Landed Estates Court. Some of the owners were greatly opposed to the Act of 1870, believing that it would interfere with the value of their property; they were disinclined to make any abatement of rent in times of depression, and sought rather to push up rents to the full competition standard, and so to get rid both of tenant right and of the provisions of the Act. A few cases of real or imagined hardship were sufficient to produce a widespread feeling of insecurity and discontent. The struggle of classes was not a new thing in Ireland—it was a very old thing; but there is a consensus of testimony that it was aggravated and intensified by the legislation of 1870. The salutary and self-acting principle of free contract had been set aside, and Parliament had undertaken to regulate the conditions of land tenancy. Its regulations were inefficient, but the tenants had been taught to place their dependence upon external help. A small modicum of protection had disappointed them, and they demanded a larger instalment. A succession of bad seasons came, and the Land League was organised. Some landlords took advantage of the prevalence of distress to get rid by eviction of tenants in arrear with their rents. Vague hopes had been kindled by the legislature and had ended in bitter disappointment, and the cruelty of the legislature, in not coming to the rescue with fresh and sweeping measures was the theme of every speech at every gathering of maddened and hungry men, and outrage, terrorism, and "boycotting" overspread populous districts.

The Land Law (Ireland Act) of 1881.

The political considerations out of which the Land Law (Ireland) Act of 1881 proceeded are beyond the scope of this essay. We know, indeed, that it was not a deliberately elaborated measure. The Duke of Argyll has told us, and his authority on the point is unimpeachable, that it formed no part of the original programme of the ministry that took office only a few months before the Bill was drafted; and Lord Derby has attributed its origin to Irish outrage and parliamentary obstruction. More inauspicious circumstances for the framing of a measure dealing so radically with grave economic issues could scarcely be imagined. Its cardinal principle is the creation of an optional court for regulating rents—optional in the sense that either landlord or tenant may resort to it. The parties may agree between themselves, but in default of agreement either of them may apply to the court to fix the "fair rent" of the holding, and when the rent is thus judicially fixed it is to remain unchanged for fifteen years, at the end of which period it may be fixed again by a new judicial process for another period of like duration. Only in the event of non-payment of rent is the landlord

to have power to resume possession of the holding. Under certain restrictions the tenant may exercise the privilege of "free sale" by disposing of his interest in the holding to another man, who shall retain possession at the judicial rent for the remainder of the fifteen years, and may then go to the court to have the rent fixed for another term. Tenancies under lease are exempted from the operation of the Act during the currency of the lease, but come under the "fair rent" provisions at its termination. The landlord has a right of pre-emption as regards the tenant's interest on terms to be fixed by agreement or the decision of the court, and thus may resume occupancy when a tenant voluntarily leaves. Other power of resumption of land held by a solvent tenant he does not possess except on payment of a fine under the name of compensation for disturbance.

Such is a matter-of-fact description of a startling innovation in the legislation of the United Kingdom. To a judicial tribunal is assigned almost unlimited powers of dealing with landed property, and these powers are delegated to sub-commissioners, of whom last year (1883) there were no fewer than eighty-five. It is not surprising that there should be complaints of inconsistency in the judgments of these sub-commissioners. One of their number said truly that it was a frightful thing to "let loose" such a body on the property of the landlords. The appointment of such a body—of any body of men however competent—for the purpose of settling the terms of money bargains, is an utter negation of economic principles. Under an economic *régime* the tenant judges for himself what he can afford to pay, and makes his offer accordingly, but under this Act an arbitrary interference with contracts is established, and "free letting," "free rent," and the free operation of economic laws are superseded and annulled. According to the report of the Select Committee of the House of Lords, which was somewhat prematurely appointed to inquire into the working of the Act, the operations of the Land Court and the sub-commissions had resulted in a reduction of rent amounting to nearly 20 per cent. on an average, and to 30 per cent. and upwards in many individual cases. Mr. O'Connor Morris, a county court judge in the west of Ireland, and a very good authority, likewise estimates the reduction at 20 per cent., or one-fifth, since 1879-80, as regards rent; and the selling value, judging from the returns of the Landed Estates Court, he computed to have fallen considerably more than one-third. It is difficult indeed to form any definite estimate of the selling value of land in Ireland at the present time, for practically estates are almost unsaleable. There is reason to think, however, that a high level of rents has in some cases prevented undue reduction, while moderate rents have been

reduced in almost as high a proportion. The Lords' Committee assert this very strongly.

This state of things is attended by collateral economic effects which cannot but have a prejudicial and enduring influence on the interests of Ireland. The Act of 1870 discouraged landlords' improvements; the Act of 1881 has stopped them altogether. Landlords have less money to invest in ameliorating their estates, and less inclination to invest in this way what money they have. Their status is impaired, their sense of importance lowered. Instead of being landlords in any real sense, their position is now rather that of lenders or mortgagees, with a right of foreclosure in the event of the non-payment of what is virtually a rate of interest kept low by a new law against usury. Nor is their rent-charge too well secured. The fear of fresh agitation is certainly not unreasonable; and the Arrears Act, by which in 1882 the small tenants were relieved of part of their obligations, however necessary it may have been as a political measure, will inevitably create an expectation of similar deliverance after the next period of distress. And what reason is there to think that rents will be better paid in the future than they have been in the past? Mr. O'Connor Morris, speaking from his judicial experience, says that every administrator of the Land Act is aware that it has increased the demoralisation and disregard of contracts, due in the first instance to the teaching of the Land League. It has been asserted that money cannot now be obtained on mortgage of Irish land even where the security is ample, and though no doubt this is an exaggeration, we may safely conclude that landlords will not burden their estates or expend any part of their net revenues on improvements of which they cannot hope to reap the benefit. Where leases exist and the tenant right is acquired by the landlord, improvements may be carried out under the co-operation of landlord and tenant as heretofore; but this is outside the Act, and the conditions which it establishes are calculated to repel landlords' capital from the improvement of the soil. The ability of the tenants to improve will be increased by the reduction of rents. But will the extra share of the produce left in the tenant's hands be devoted to improvements? It is very much to be doubted. Personal expenditure seems much more likely to absorb the difference. In Ireland there is no healthy rivalry in improvement; and there is no reason to expect that the easy conditions of "fair rent" and fixity of tenure will infuse a spirit of precipitate progression.

As regards more remote effects the great practical question is will this legislation afford a lasting settlement of the land question? No person who has considered the problem either in its historic or its economic bearings can with any confidence cherish such an

expectation. For one thing the benefits of the Act are for the most part real benefits only to tenants in actual occupation. Their successors will be saved from competition rents, but will be subject to a fierce competition for the tenant right; and the interest on the purchase price of the tenant right, added to the yearly payments to the landlord, will be equal to a full and grinding rack rent. For the essence of "free sale" is that there should be unrestricted competition for the tenant right; and "land hunger" in Ireland is not in the least likely to abate. The condition of the tenant may in one respect indeed be worse than ever. The political and social influence and amenity of landed proprietorship have been impaired. Why then should the landlord be less exacting than other creditors? The money lender is fast becoming an omnipresent if unseen power in Irish rural economics. Prior to 1870 the Irish tenants were comparatively free from debt, for the very good reason mentioned by Lord Derby, that they had no security on which to borrow; but the Royal Commissioners on Agriculture found that within the next ten years debts had accumulated until many of the small farmers owed from five, six, and even ten times the amount of their annual rent, and that this indebtedness was partly to banks, which charged at the rate of 10 per cent. per annum on small farmers' bills, and partly to private money lenders, whose charges were still more exorbitant. In times of distress the banks and money lenders may be expected also to stand by the terms of their bond. What happened in 1877-79 is what will happen again in an aggravated form whenever two or three bad seasons again follow each other. The landlord demanded his rent, the banker called up his loans, the merchant pressed for payment of his accounts, and the village usurer put his decrees in execution. In such a time the lot of the purchasers of tenant right with money borrowed at the high rates of interest current in rural Ireland will be an unhappy one. As for the small tenants for whom the Act of 1881 did nothing until the Arrears Act was passed to relieve them of their unpaid rents, they cannot possibly live through two bad seasons on their miserable patches and pay any rent whatsoever; they will fall into fresh arrears, and will again be liable to eviction. Then how about the labourers, who number somewhat more than the agricultural tenants? For them the Act does less than nothing, for in proportion as landlords' improvements are stopped without tenants' improvements being increased will they lose employment. A few unemployed labourers exercise a most potent influence in depressing the rate of wages, and here we have a great number of men scrambling for employment and willing to work for the means of bare subsistence. This alone constitutes a public danger.

Peasant Proprietorship in Ireland.

We must now consider briefly the clauses of the Acts of 1870 and 1881 which contemplate the creation of a peasant proprietary, the "Bright clauses," as they are sometimes called. The purchase clauses of the Church Act have worked successfully; those of the Land Acts have been an all but complete failure. The Church tenants if they refused to purchase had to take the risk of eviction or of the transfer of the property to less indulgent landlords; but other tenants are under no such apprehension, and the difference between fixity of tenure at a fair rent and absolute ownership is so very slight that it is not surprising that sales should be few. The proposal of the Lords' Committee that the *whole* purchase money should be advanced by the State instead of the three-fourths sanctioned by the Act of 1881, would increase the demoralisation already too rife in Ireland where agrarian questions are concerned, by tempting the peasant purchasers to agitate for abatements of purchase money in times of depression as they have hitherto agitated for abatements of rent. It has also to be remarked that the benefits of peasant proprietorship have been much exaggerated. In the Channel Islands, in Belgium, and in France, the system of small holdings owned by the cultivators is attended by highly beneficial results. But these are lands of sunshine, fruit trees, and market gardens; and the climate and soil of Ireland are opposed to the successful development of the system there. The plodding drudge of France or Flanders is also a different kind of person altogether from the typical Irishman. In a word, the attempts of the legislature to create a peasant proprietary in Ireland have not prospered except in the case of the Church lands; and the system, taking the most favourable view of it, has not in Ireland got beyond the stage of a doubtful experiment; nor is it at all likely to get beyond that stage.

Even if it could be shown that the two great measures dealing with Irish land will not permanently alienate capital from the soil, they would still be doomed to failure as ignoring a fundamental element in the problem. Reference has already been made to the "land hunger," and to its cause in the over population of a country in which there are few manufactures. The "old checks "on population" are now removed; sanguinary feuds and desolating wars have ceased; famine is met by the poor law and the efforts of private philanthropy; plague and pestilence are warded off by sanitary administration and better conditions of living. Still there is a great mass of population in chronic distress on its borderland; and the land is greatly overcrowded, especially in the south and west. In the island of Achill, in 1880,

Mr. Tuke visited two village communities, one of which consisted of 250 persons, supported by the produce of 200 acres of agricultural land, supplemented by hill pasture; the other of 450 persons "or more," who had 400 acres arable and a proportion of mountain grazing. The Assistant Commissioners on Agriculture mention an estate in county Sligo where they found 94 tenants and 98 cottiers, in all 192 families, numbering 1,152 human beings, "trying to live "on 329 acres of land;" and they remark that a similar state of things prevails in many places along the west coast, existence being eked out by a little inefficient fishing. Of 600,000 agricultural holdings in Ireland, 300,000 do not exceed 15 acres, 115,000 are of 5 acres and under, and 50,000 do not exceed 1 acre. In the five counties of Donegal, Mayo, Sligo, Galway, and Kerry, about one-half of the holdings are not over 4*l.* of valuation; and nowhere in the world is the condition of the people more wretched. No system of land laws can bring prosperity to a population so greatly overcrowded in such a country; and any advantages conferred upon the peasant by the legislature at the expense of the landlord will soon be dissipated on the maintenance of increased numbers, where a wholesale exodus to other localities or lands is the prime necessity.

The Legislature and British Agriculture.

But it is not alone with reference to Ireland that laws of far-reaching scope have been passed for the purpose of regulating the ownership and occupancy of land. The Agricultural Holdings Acts of 1875 and 1883, The Ground Game Act, The Hypothec Abolition (Scotland) Act, and The Conveyancing and Settled Land Acts contain very important provisions affecting the agricultural interest, but they do not introduce such novel and questionable principles as distinguish the Irish legislation. The last Agricultural Holdings Acts for England and Scotland and the Ground Game Act restrict "freedom of contract," and are *primâ facie*, though not really, of a protective character. These Acts are suited to the tripartite system of landlord, tenant farmer, and farm labourer, universally prevalent in England and Scotland. This unique system has great practical advantages. Nowhere is so much taken out of the land at so little cost as in this country, acre for acre. Nowhere is the practice of agriculture carried to such perfection as on our best farms. Our British system is not compatible with minute subdivisions of the land; it requires that farms should be of considerable size in order that advantage may be taken of machinery, division of labour, and all the aids of economic production. Before these Acts were passed the best arrangement for the tenure of agricultural land was that of a lease

for a moderate term of years, under which the farmer was able to carry on his business with energy and the confidence that he would reap the reward of his enterprise. But many leases were full of restrictive covenants, and as they were not in general renewable until their expiry was close at hand, they led to the exhaustion of the land during the last years of their currency. For whether under lease or held from year to year, British agricultural land has been too often administered in accordance with the old legal maxim, *Quicquid plantatur solo, solo cedit.* Any building raised upon the land, any drain put under it, any manure put into it, has been liable to confiscation by the landlord, and there have been many instances in which such appropriation has taken place. One or two notorious cases having occurred about a dozen years ago, Mr. James Howard gave notice of a motion to call the attention of the House of Commons "to the question of the insecurity of "tenant farmers' capital, and to the injury sustained by the public "thereby," and of a Bill to give the desired security. This Bill was the precursor of the Agricultural Holdings Act of 1875, which affirmed the principle that capital invested by the tenant in the improvement of his holding is his own. The Act of 1875 was "permissive" and inoperative, and it was not till 1883 that compensation for improvements was made compulsory. The leading features of the Agricultural Holdings Act of that year, and of the companion measure for Scotland, are (1) an indefeasible right of compensation to the outgoing tenant for such improvements as he may have effected in his holding according to their value to the succeeding occupier; (2) a year's notice to quit; (3) one year's distraint for rent (instead of six), with limitations on the seizure of stock and machinery. Any private agreement excluding compensation for manurial improvements under the Act must itself provide "fair and reasonable compensation," or it will be "void "both at law and in equity."

The objection has been raised to compulsory compensation for improvements that it violates freedom of contract. "Freedom of "contract" has been bandied about as a phrase or catchword saving the trouble of argument, and sometimes serving to obscure the point at issue. The landlord's power suffers no infringement in relation to improvements or alterations that change the character of the holding. To all such alterations his consent is required, and if they are made without his consent they become his property, excepting in the case of "fixtures" within the meaning of a late section of the Act, which may either be removed by the tenant or purchased by the landlord at a valuation. In the provisions relating to draining and manures, "freedom of contract" is subordinated to freedom of industry. The landlord is not to be at

liberty to let land for ordinary agricultural purposes and to annex conditions depriving the lessee of the right of carrying on his business in accordance with the rules and practice of good husbandry. The great need of British agriculture is admittedly the application of more capital to the soil; and though it is desirable that much of this capital should be landlord's capital, the business of actual cultivation appertains to the tenant, and the present Act secures to the tenant that whatever capital he employs with due skill and judgment in improving the productive qualities of the soil shall be restored to him either in the form of crops or in that of a money payment. With regard to draining, which though it partakes of the character of a permanent improvement, is also necessary to good husbandry, the Act gives the tenant a power of stimulating the landlord to action or of rectifying the consequences of his neglect and inactivity. In its general effect the Act conduces to improvement and enterprise by imparting security and confidence. It gives the tenant no more than many tenants enjoyed before. None the less was it necessary to give free scope all over to the economic forces by which industry is energised. The freedom and security of the farmer are no longer an exceptional boon conferred by an exceptional landlord; he will be incited to trust to his own resources and not to lean upon landlord or legislature. The Act is free from the vice of protectionism; it confers rights, or rather removes disabilities, but the farmer is left to assert his rights and utilise his powers.

The restriction of the law of distress will also be of considerable indirect advantage to the farmer. The landlord's preferential right had the effect of lowering the tenant's credit with the banker and thereby of impeding the application of capital to the soil. The Ground Game Act prohibits the landlord from letting his land for agriculture and at the same time reserving a right to quarter wild animals on the tenant's crops. The landlord is not deprived of his right of sport, but the tenant has obtained a joint and indivestible right of protecting his property against the ravages of wild animals. Here again the tenant receives only the power of self-help. Arable land may no longer command the old rents from "shooting tenants" in addition to the agricultural rent, but the total produce will be augmented by the better preservation of crops and the greater freedom and economy with which the farmer is now able to carry on his business.

All these are measures giving relief and freedom to the tenant farmer. The most considerable legislative gain which the landlord has received in recent years is that conferred on him by Lord Cairns's Settled Land Act of 1882 and the Scotch Entails Act. About three-fourths of the land of this country is held by

" limited owners " under settlement or entail; and these Acts are a first step towards what is popularly known as free trade in land. Portions of estates suitable for residential purposes may occasionally, under the provisions of those Acts, be sold and the proceeds invested in eligible securities yielding more than the equivalent of the rental parted with. In such a case it is manifestly to the interest of the incumbered landlord, as well as for the public advantage, that he should sell a portion of his land, provide for the fixed charges for which it is liable, and apply the remainder of the price to the judicious improvement of the property he retains. We need not expect miraculous results from the legislation enabling him to do this, but it is an instalment of freedom to the landowner, and may be expected to bear some fruit in the improvement of estates.

Compulsory Education.

Before the passing of the Education Act we heard much about the inability of this country to compete with foreign manufacturers by reason of the superiority of foreign workmen in education and intelligence. Economic as well as moral considerations were advanced by the advocates of universal and compulsory education, and in process of time the Act was passed. There are drawbacks which in some degree mitigate the great good it is doing. Our public education is too much after one pattern, regulated by a rigid code, inspected and paid for according as it conforms with arbitrary standards. Between grants and rates about two-thirds, roughly speaking, of the cost of education in the public elementary schools is defrayed by the public, and only one-third by fees. This goes far to meet the plea that education which is compulsory should also be free; and there are weighty reasons why the responsibilities of parents should not be further lightened. Instead of the fact of two-thirds of the cost of education being devolved upon the public affording an argument for relieving parents from the other third, it ought rather to serve as a warning that we have gone far enough in a perilous direction. It is true that the country is getting and will continue to get an ample return from its outlays on education. There is a close connection between ignorance and crime; and since about the time of the passing of this Act the number of convictions for criminal offences in Great Britain has diminished by nearly one-fourth. Education opens up avenues of rational enjoyment that compete successfully with the degrading enticements of intemperance; and the present Chancellor of the Exchequer (Mr. Childers) stated in his budget speech of 1883, that there had been a decrease in the consumption of spirits in the United Kingdom during the preceding seven years accounting for

an annual loss to the revenue of no less than 5 millions. Pauperism, in spite of trade depression, has fallen off along with crime and the revenue from alcohol. These changes may not be results of the Education Act exclusively, but they cannot be fully accounted for except on the hypothesis that the growth of intelligence, that is to say of education, has much to do with them. If this view is correct, we may expect to see continued improvement as the living generation comes to consist more and more of persons who have grown up since elementary education was made compulsory for every child. Steadiness, trustworthiness, regularity, sobriety are qualities that count for not a little in economic arrangements; the saving in the cost of repressing crime and of maintaining paupers, and the saving in time abstracted from industrial pursuits by intemperance and its consequences, are clear gains both to the production of wealth and to the welfare of the labouring classes. The mis-spending of time and money due directly or indirectly to ignorance lowers the social status and physical condition of the labourers; what is spent on indulgence cannot be spent on food, clothing, and healthy dwellings.

In another way education has important economic results. It calls forth powers which without it are latent. By the operation of the Education Act these latent powers are elicited, and the children even of the lowest ranks have something like a fair start in life. Thus the nation is intellectually enriched, and obtains a higher proportion of men qualified for the higher grades of labour.

The Factory and Public Health Acts.

The Factory Acts were not passed for educational ends exclusively, they were also intended to benefit the health and physique of children. In both ways they are instrumental in developing industrial resources, in preventing the waste of power by premature use, and in increasing the efficiency of labour. The health legislation of recent times, though including much that is futile and vexatious, has had the effect of reducing in a material degree the sickness and death-rates of all our cities. The sickness and mortality of breadwinners are causes of pauperism among the dependents, and so of cost to the community; they detract also from the volume and productive efficiency of adult labour. The great principle of natural liberty is inapplicable as a motive power in sanitary improvement, for unsanitary and dilapidated dwellings notoriously yield a far higher rent in proportion to their capital value than can be obtained from well equipped and healthy tenements. And further, the effect of individual liberty left unrestricted is to spread epidemic disease through a whole town or district. Sanitary regulation rests upon a principle akin to that underlying the repres-

sion of crime. The most notable piece of sanitary legislation of the last few years is the Artisans Dwellings Act of 1875, amended in some particulars by later measures. This Act has failed chiefly through embodying ruinous principles of compensation. Overcrowding is pronounced to be a nuisance within the meaning of the Sanitary Acts, and if these Acts were carefully enforced an adequate and natural remedy would be found for most of the existing evils, without involving either the central administration or the local authorities in those mercantile dealings with land which are almost invariably little to their profit.

Shipping; Employers' Liability.

Many Acts for the regulation of shipping have been passed in recent times, all having for their primary object the prevention of shipwreck and the saving of life; and so little success has attended this incessant law making, that the department charged with the duty of seeing to the administration of these Acts is now promoting a radical change of principle and method. It has been found that Government action has become a standing excuse and loophole for culpable neglect. The true policy is to strengthen individual responsibility so as to make it an unfailing factor in the success of enterprises, though not to the extent of making that responsibility too great to be borne except by reckless men. It is quite possible to carry the principle of the Employers' Liability Act, for instance, to such an extreme of indirect and constructive responsibility as to drive capital out of particular trades. So likewise in regard to shipping, it is possible so to extend the salutary principle of individual responsibility as to deter careful and cautious men from incurring its risks.

Conflicting Tendencies; Conclusion.

The conflict between the antagonistic principles of individualism and socialism is manifest in all our recent legislation. On the one hand we have the State undertaking all sorts of functions on behalf of the people—carrying their letters, telegrams, and parcels, doing their petty banking, granting them policies of life assurance; looking after their moral and physical welfare by means of the omnipresent inspector; lending money to improve land, and even—in Ireland—to buy it, and to build schools, and construct harbours, piers, and breakwaters; and emigrating "congested" populations to places where there is more room for them. By "subventions to "local taxation," the unperceiving taxpayer has been burdened for the relief of real property, and the securities for economy have been impaired, localities being tempted to dip as deeply as possible into the national purse. Loans for public works are not quite a recent

innovation; but in their new application to Irish tramways and to the purchase of land by companies for re-sale to peasant proprietors, they are being extended in directions ominous of future trouble. On the other hand we have several important measures of recent date, the predominating character of which is to give freedom, to provide a field for the exercise of self-help, to do away with invidious restrictions and one-sided privileges. Many measures that help to raise the less opulent classes to a higher plane of life are the reverse of socialistic in tendency. Education, for example, stimulates instead of paralysing individual energy. To provide healthy houses at the public expense would be an enormous evil, especially if they were let at smaller rents than would sufficiently remunerate private enterprise in the erection of dwellings of the same class, and even this would hardly be going beyond the principles of the Irish Land Acts; but so long as sanitary measures are limited to the abatement of nuisances, and such objects of municipal action as water supply and sewerage, they produce a maximum of good attended by a minimum of evil. The Agricultural Holdings Acts, though they are to some extent restrictive, also come within the second category for the reasons already indicated. Essentially they are measures giving freedom and security to the tenant farmer, and establishing conditions without which he applies capital to the improvement of the fertility of land at his peril.

In this essay only the principal legislative measures involving economic principles have been discussed. Minor legislation has been left unnoticed, and attention has been confined chiefly to the main scope of Acts of first-rate importance, and which are likely to exercise an appreciable influence for good or evil on the destinies of the Empire. Mr. Newmarch was one of the most strenuous and far-seeing upholders of the principles of economic science as defining the spheres of legislation and freedom in relation to wealth, and I am not sure that he would not have considered these pages to be tainted by too great tolerance of State interference. "One of the great dangers which now hang over this country," he once said, and he often used language of similar purport, "is that "the wholesome, spontaneous operation of human interests and "human desires seems to be in course of rapid supersession by the "erection of one Government department after another, and by "the whole time of parliament being taken up in attempting to "do for the nation those very things which, if the teaching of "Adam Smith is to bear any fruit at all, the nation can do much "better for itself." The inutility of inspectors in relation to merchant shipping has recently been proclaimed by the Government itself; and happily all our recent legislation has not been out

of conformity with the teachings of Adam Smith. Let us hope that healthier tendencies will be manifested in our future legislation than have always been observable in that of even the recent past, and that more and more of the laws imposed by parliament will be such as would have approved themselves to the clear strong mind of Mr. Newmarch.

Discussion *on the* Selected Portions *of the* "Newmarch Memorial Essay," *read at the* Meeting *of the* Society, *on the 20th January*, 1885, *the* President, Sir Rawson W. Rawson, K.C.M.G., C.B., *in the Chair.*

The President having announced the arrangements that had been made for holding the (then) approaching Industrial Remuneration Conference, said he had now to express Mr. Giffen's very great regret (in which the Council joined), that he was not able to submit to the Society the paper he had promised on the subject dealt with in his annual address last year. Unfortunately Mr. Giffen's health broke down last week, and he had been incapable of finishing the paper in time for the meeting that evening. Under these circumstances the Council had decided to bring before the members the "Newmarch Memorial Prize Essay," on "The Extent to which Recent Legislation is in Accordance with or Deviates from the True Principles of Economical Science." Knowing that this was a subject in which the late Mr. Newmarch had distinguished himself, and wishing to do honour to his memory, a member of the Council—Mr. Pochin—came forward of his own free, generous will, and offered a prize of 100*l.* for the best essay upon the question. As many as six were sent in response to the invitation, with the result that the prize had been awarded to Mr. William Watt, of Aberdeen, to whom he had now the great pleasure of presenting the substantial return for the trouble he had taken in writing the paper. The essay was not intended to be read in its entirety, being much too long for such an occasion as this, but Mr. Bourne, who was one of the referees, had been kind enough to look through it and select those parts likely to be interesting to the members and to lead to a discussion. With regard to Mr. Newmarch he (the President) was sure that they all wished to do him honour. He had been one of the lights of the Statistical Society, and all who desired to understand statistical and economical science, owed him a debt of gratitude for the way in which his researches had tended to simplify their task. There was no occasion for him (the President) to expand upon the great benefits Mr. Newmarch had conferred upon the Society, and upon the men who followed him in his profession, for they were already well known. He would therefore say no more than that the Council wished on this occasion to do all

the honour to his memory that lay in their power. The President then congratulated Mr. Watt upon his success, and called upon Mr. Bourne to read an abstract of the essay.

(Mr. Stephen Bourne having read selected portions of the essay),

Mr. Hyde Clarke said that as the essay had been brought forward not so much for the purpose of discussion, but as a tribute to the memory of their distinguished and lamented friend William Newmarch, he would endeavour to address the members in that spirit rather than to enter into any of the enticing subjects contained in the paper. In the first place he could not but remember the deep interest evinced by Mr. Newmarch in the progress of the Society, and what he had done for the promotion of its welfare. Some years ago it had occurred to many of the members that the Society was not so fully as it might be meeting the objects for which it was founded, and that it was capable of a greater degree of activity and development. They would all remember that at one time it was an established tradition that the presidency of learned societies should not be given to their members but to men of distinguished title, or distinguished workers in other directions than in that of the science over which they were to preside. To a certain extent that had been the case with the Statistical Society, and if among the roll of distinguished men who had presided over the institution there were some who particularly applied themselves to economic science and statistics, there were many more to whom had been offered an empty title, which was not wanted for their own distinction, and which in the end proved of no service to the Society. As an example he would refer to a most distinguished man, and one who enjoyed the admiration of all who were present that evening—William Ewart Gladstone. Mr. Gladstone had been their President, but what was his real relation to the Society? The Fellows heard from him an address which would no doubt continue to be read for many years to come, but from that time forward in his two years of presidency, the members saw nothing of him. Nor could it be expected, because he was engaged in duties far more important than that of attending to the administration of the Society. Mr. Newmarch, however, thought that one of the means of promoting the study of economic science would be to give the presidency of the Society as a distinction to those who were engaged in cultivating that science, and he at last succeeded, with the aid of others, in carrying a measure which embodied his opinions on the subject, and which had done much to preserve the vitality of the Society. He was one of those who were consequently chosen President in virtue of this qualification. It gave him (the speaker) great satisfaction to see in the chair that evening one who in early life and for so many years had rendered such important services to the Society as had Sir Rawson Rawson. It would be scarcely possible to enumerate the many ways in which Mr. Newmarch had contributed to the advancement of the Society, and consequently to the benefit of the

public. Even after his death the Society was experiencing the value of his past services and the benefits still accruing to his memory and his name; for when the Newmarch Memorial Fund was formed it became a means for the special advancement of economic science, inasmuch as it was the desire of one who was the partner of his joys and sorrows, that such a memorial should be appropriated not as a tribute to herself and family, but should go to promote the science that he had cultivated to such purpose during his life. Another instance of the benefits that still came to the Society and to the public consequent upon Mr. Newmarch's labours, was that they had inspired Mr. Pochin to do what he had done, and he (Mr. Hyde Clarke) was confident that the essay would be productive of much good when it came to be read by the Fellows of the Society and the outside world. The members were also greatly indebted to Mrs. Newmarch for the valuable presentation she had made of her husband's economical and statistical books to the Society's library, which had greatly increased its literary and scientific resources. He could mention that in the same spirit Mrs. Newmarch had given the political books of her husband to the political library of the City Liberal Club, of which he had been an active founder. The club had devoted to the service of their colleague a Newmarch bookcase. He thought that when it was seen how the memory of such a man became productive of benefits such as these, it could not be said that commemorations of the kind they were observing that evening were useless, or that they ought to be neglected.

Mr. John Glover said he had not the least idea before he came to the meeting that the evening was to be devoted to doing honour to the memory of Mr. Newmarch, and he believed that if that arrangement had been more generally known amongst the Fellows of the Society, the room in which they were met would have been crowded. He could well remember the incalculable pleasure and instruction which he derived from the speeches of Mr. Newmarch in St. James's Square, and he should never forget the fulness of knowledge brought to bear by him on the questions that came up for discussion, and which made his hearers, when he sat down, feel that they had really heard something on the political and economical subjects in hand worth listening to. With regard to the Prize Essay, it would hardly be right to enter into a serious discussion of it that evening, but he felt constrained to demur to the too apologetic tone of the author as to the place occupied to-day by political economy. He (Mr. Glover) was quite aware that it was not now nor ever had been quite understood; he did not think it would ever become a fashionable science. At the same time he was of opinion that political economy had a firmer hold on the hard-headed portion of the English people to-day than it ever had. He could not help thinking of what Mr. Newmarch would have said if he had heard anything about political economy falling into disrepute. "Why, Sir," he would have said, "well, we political economists have very largely succeeded in bringing into operation in our country the dreams of the illustrious Scotch

thinker of a century ago—Adam Smith." Political economy going out of fashion! What did those who talk so expect? When the legislature of this country was asked to write the doctrines of free trade into our statute books, certain important results were prognosticated. Has anything which was promised not happened? Were the English people led to believe that there should be no more depressions of trade, no succession of bad seasons, no panics, no overcrowded labour market? Nothing of the kind. It was premised that the effects of these inevitable evils would be ameliorated by free trade, and they have been ameliorated. It was said that under a free trade policy we should have a better demand for our exports. It is a simple question to ask ourselves whether we have had a better demand for our exports as the result of free trade principles. What is the answer? Mr. Giffen said the other day that the exports per head in 1840 were represented by *1l.* 18*s.* 9*d.*, and that in 1880 they had increased to *6l.* 9*s.* 5*d.* This states the increase in exports relatively to the growth in population; stated absolutely the result is more surprising. Our exports have increased nearly five-fold since we became free traders; from about 50 millions to about 250 millions. If such growth followed the adoption of a new policy, what is the ground of dissatisfaction? Could more growth than five-fold have been expected? We were also told that we should have not only better exports, but better imports by means of free trade, and the prediction has had marvellous verification. The authority he had just quoted showed that whereas in 1854 we imported goods to the extent of *5l.* 3*s.* 2*d.* per head, in 1880 the figures had grown to *11l.* 18*s.* 7*d.*, or more than double. He (Mr. Glover) would ask again what had political economists to be apologetic about when their policy was bearing in such abundance the very fruits that had been expected of it? Increased exports and imports are an immense national benefit, but besides these advantages to the State, free trade promised great benefits to the individual. For instance, it promised better employment to the working classes, and they had got it; for despite the immense increase in their numbers, the labour demand was larger and more continuous than formerly. Then again the pages of the *Journal* had shown repeatedly that the wages of the working classes had also enormously improved, and only last week, in a contribution to the "Times," Professor Leone Levi stated that within the last fifteen years there had been a rise of nearly 25 per cent. in the rate of remuneration of labour. Lastly, the political economists had promised that free trade would give the people cheaper food, and they had got it, and "they know the reason why." His belief was that any attempt on the side of any party in the State to tamper with these principles would provoke a demonstration on their behalf which would surprise none so much as the economists themselves. He would only mention further, and as a special tribute to the memory of Mr. Newmarch, two out of the many unexpected benefits which have followed in the train of the policy of which he was such an eloquent advocate. He (Mr. Glover) did not think that the most sanguine free trader ever dreamt that free trade in imports would lead to a sort of

perpetual harvest time; yet so it was. The whole world had been stimulated to produce for the supply of the growing population of our portion of it. Harvest time begins in Chili, in Australia, and in New Zealand in January; India takes up the tale in February; Syria, Palestine, Persia, and Egypt continue it in March, April, and May; California resumes it in June; the other United States in July; ourselves in August, and the more northern European nations are occupied with it in September and October; so that under the influence of free trade principles harvests in which we are intimately concerned are going on for ten months out of the twelve—a marvellous illustration of the influence of good principles in putting larger areas of the earth under tribute for the service of mankind. The second unexpected benefit which Mr. Newmarch had done so much to make possible was the cheapening of the means of human subsistence everywhere. People talked as if free trade had helped only some of the English people, but there was not a human being alive who was not now getting his food cheaper in consequence of the introduction into England of free trade in food. It seemed fitting to remind ourselves of such facts in connection with the memory of one of the most distinguished advocates of the principles which had made them possible, and to recollect how hardly he had worked to secure through them the greatest happiness of the greatest number, not in our country only, but everywhere. With such facts before us we might reasonably expect that those great principles will come into operation in other countries after a little time, and that such an impetus will be given to civilisation thereby as would have gladdened the heart of our lamented friend, and ought to give encouragement to all who are now labouring in support of good and sound principles.

Mr. David Chadwick said he should be sorry if such an assertion as this should pass without a word of opposition. He had known Mr. Newmarch intimately, and no one held him in higher estimation. A quarter of a century ago, at the special request of Mr. Newmarch, he had written a paper for this Society on the rate of wages in two hundred trades during a period of twenty years. He (Mr. Chadwick) knew Mr. Newmarch's objections to any interference with what he considered the rights of property and with freedom of contract. Whilst we should adhere in the ordinary course to the doctrines of Adam Smith, we should not carry them to an extreme, and the essayist had not, he thought, taken sufficient account of three great elements that had a right to be considered before either the words of Adam Smith or any view that might be formed of the precepts of political economy, viz., first, that the health and lives of the people should be preserved and respected, which involved the compulsory provision of healthy houses, and therefore interference with property; secondly, that they should have cheap food, which meant interference with vested interests; and thirdly, that they should have cheap and good education provided for their children, which meant interference with prevailing ignorance. If he correctly understood them, he objected to the first and last paragraphs of the essay. Some of the

opinions of Mr. Newmarch might be considered crotchets, and as impossible to apply at present in practical legislation. The health, food, and education of the people were considerations superior to any rules of political economy. In every recommendation of Adam Smith there must be limitations and exceptions, but they were few, and only proved the rule. He understood the essayist to refer to the Factory Acts as objectionable. No reasonable manufacturer at this day would ever attempt to work his young *employées* to a greater extent than that prescribed by law. He feared that the essayist would make the doctrines of political economy appear objectionable to reasonable people, and encourage disregard to statistical science. He was sure the public were thoroughly in favour of the recent Acts and the penalties dealing with shipowners who did wrong. As to the Irish Land Act, he held that it was a beneficent measure, and a most justifiable deviation from the rules of political economy. Before it passed, many of the Irish peasants had been living in a most degraded state; the land was uncultivated, and the landlords could not obtain their rent, and its value was greatly reduced; but since the Land Act came into operation, the sale value of the landlords' interest in property had in some cases nearly doubled, and the country was being gradually redeemed from poverty and misery. He understood the essay to cast a slur upon parliament, and say that it disregarded political economy and statistical facts. Why, the whole of the legislature of this country was based upon statistical facts, and some of the recent Acts had been based on the facts and figures in the reports of the late President of this Society (Dr. Giffen), who had been made the head of a great department of the Government. Economic science and statistical facts were not ignored by the Government or by parliament, and it was only when self interests or party purposes were to be served that it was said by ignorant persons, "figures would prove anything." The eminent public services that Mr. Newmarch and the Statistical Society had rendered was proved by the fact that our laws during the last forty years, and especially in recent legislation, had been in accordance with the principles of economic science, tempered only by special considerations. He thought that all those who had known Mr. Newmarch, and appreciated his eminent services to economic science and statistics, would consider that some of the points he had referred to had been made rather too prominent a feature in a prize essay in his honour.

Mr. George Howell also protested against some of the conclusions in the essay, and denied that many of the legislative enactments referred to in the paper were adverse to the doctrines of Adam Smith, though they might be entirely opposed to some of the notions put forward by those who regarded themselves as his disciples. He (the speaker) did not consider that Mr. Newmarch was in all cases a true disciple of that great man, and believed that during his lifetime he had opposed much that was in accordance with the principles of political economy. The doctrine of freedom of contract looked very nice on paper, but for that to obtain

there must be something like equality between the contracting parties, which was a thing that very rarely happened. If the strange notion that was entertained by many about freedom of contract had been allowed to prevail, rotten ships might be sent to sea and sailors drowned by tens of thousands with impunity; and the miners would continue to suffer death at the same rate now—1 in 245—as they did before their lives were protected by parliamentary enactment. But owing to beneficent legislation, the death-rate from accidents in mines had diminished quite 50 per cent. in thirty years. Much of this legislation was in accord with the doctrines of Adam Smith, and many who called themselves political economists to-day seemed rather inclined to deviate from than to follow those principles. He knew something of the works of Mr. Newmarch, and though he differed from him in many ways, he thought it was their duty to pay a tribute of respect to his distinguished abilities and the earnestness of his labours. The Society was also indebted to Mr. Pochin for offering the generous prize which had resulted in producing so very able an essay. Judging from the portions that had been read from it, he (Mr. Howell) differed from some of its conclusions, but he thought it well worthy of the prize awarded its author.

Mr. Pochin said it was a matter of great satisfaction to have heard the speech of Mr. Howell, bearing in mind how often he had been opposed to Mr. Newmarch in the discussions of the Society. The remarks of Mr. Chadwick, however, had given him (Mr. Pochin) unmixed pain, and he was sorry that he had so completely and in every particular misrepresented Mr. Newmarch's opinions. Mr. Newmarch was one of the last men to withhold from the people, rich or poor, anything that would have promoted their well-being, and the principles he most sought after were those that would benefit every class of the community. He held that the doctrines of political economy if rightly understood were deductions from known facts, and if political economy was anything it was that. It did not centre itself in free trade or in any special act of legislation, but inculcated principles applicable to all legislation; those principles were, that what was done or left undone should ultimately result in giving to the governed the largest supply of the necessaries of life. Mr. Newmarch believed in the doctrine of *laissez faire*, and did not attempt to prescribe any narrow line of action. No man brought a more powerful brain than he to bear upon the facts that were the subject of inquiry, and no one was bolder in demanding that sound principles should be at the bottom of all legislature, they and they only could bring lasting benefits to the nation. He (Mr. Pochin) was very glad indeed that the essayist so well understood the doctrines of Mr. Newmarch, and had propounded them so faithfully. When he heard his remarks upon the Irish Land Act, he thought he heard again the voice of their lamented friend. There were some points in the paper however with which Mr. Newmarch would have been at variance, but on the whole it was a paper that did honour to the writer, and set forth sound doctrine. He was very pleased that the essay was the

work of a gentleman connected with the press, more especially as it was well known how intimately Mr. Newmarch was connected with the metropolitan press, and how ably he performed the duties that devolved upon him in connection with that branch of his busy life. During the fifty years of the Society's existence, many able members had been enrolled, but there was no one whose memory lived so fresh in the affection and gratitude of the Society as did that of Mr. Newmarch.

The PRESIDENT said that Mr. Chadwick had seemed to imply that upon every question a little friction was useful, and he was sure the members could not but feel grateful to him for having elicited, in honour of Mr. Newmarch, the speeches of Mr. Howell and Mr. Pochin.

Mr. WILLIAM WATT, the author of the prize essay, then returned thanks for the reception that had been given to his labours, and said that he only wished the result had been more worthy of the Society, of the liberality of Mr. Pochin, and of the great man with whose name it was associated. With regard to the discussion he would not attempt to review it, but when the essay was seen in its entirety, it would be apparent, he thought, that some of the remarks made in the discussion had been anticipated by him, especially with regard to the education and the health of the people. He had never had the privilege of seeing Mr. Newmarch, but he had read many of his works, and, with regard to these matters, he recollected that, especially in his address at Manchester as President of the Economical Section of the British Association, Mr. Newmarch had dealt with the question of factory legislation, and had set forth conclusions not unlike those which he (Mr. Watt) had expressed in his essay. Mr. Newmarch was by no means an out-and-out opponent of such legislation; on the contrary, he expressed strong approval of it so far as it affected the health and mental development of the young. Trade had been referred to by one of the speakers, but he did not think that came within the scope of the essay, inasmuch as the subject was the effects of recent legislation, and there had not of late years been much legislation bearing immediately upon commerce. In conclusion Mr. Watt again thanked the Society for its courteous reception of the paper, and the various speakers who had taken part in the discussion.

A hearty vote of thanks was then moved to Mr. Bourne for having read the paper, and the proceedings terminated.

MISCELLANEA.

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I.—*Wine Production in France.** *By* Paul Leroy Beaulieu.

Translated from the *Économiste Français* of the 16th and the 23rd May, 1885 :—

It is now about twenty years since a microscopic insect, introduced from America, commenced to attack the vineyards first of France, then of Spain and Germany, and afterwards, though not so severely, those of the other wine growing countries of Europe. The ravages of the phylloxera in those districts of the Mediterranean which fifteen or twenty years ago were looked upon as a terrestrial paradise, have had the effect of reducing the incomes of vineyard proprietors almost to a minimum, and also of diminishing the wages of the labourers by at least a third if not a half. On the other hand, the prices realised by wines owing to the falling off, which since 1877 or 1878, has been experienced in the production, and the belief that prices would continue to rise—an anticipation which has not however yet been realised—caused a great extension of the area under grape cultivation, a considerable extent of land being taken out of other cultivation and turned into vineyards.

In France the whole extent of the valley of the Garonne, where only ten years ago the vine as compared with other crops held a very modest rank, is now covered with young vine shoots. In Italy, Spain, and Portugal, farmers have embarked extensively in vine cultivation, Algeria is largely devoted to viticulture, and Tunis is now anticipating the most valuable results from it. We also have it on the best authority that in the United States of America and in Australasia vine cultivation is commencing to play a very important part in the agriculture of the country, but as regards Australasia the condition of the wine industry does not appear to be by any means in the flourishing condition that is represented by many interested writers.

* With reference to this paper attention may be called to two papers on the same subject by Mr. A. E. Bateman, F S.S., to be found in the *Journal*, viz., "A Note on the Statistics of Wine Production in France," p. 113, vol. xlvi, and "Wine Production in France," p. 609, vol. xlvii.—[Ed., *Journal.*]

Unfortunately the same high prices that ruled for two or three years tempted many unscrupulous persons to resort to every description of falsification and adulteration, cargoes of raisins being imported from Greece and Asia Minor to be used, with the addition of alcohol and sugar, in the manufacture of a so-called wine, which was placed on the market side by side with the pure juice of the grape. Again, Spanish wines adulterated with German potato spirit, with a considerable admixture of water, have been extensively employed to assist nature, and many other more or less questionable practices have of late years been introduced in wine making.

There can be no question that the production of wine has failed to kept pace with its consumption, and the question arises, what will be the result if the demand is to continue to be so largely in excess of the supply. This is a subject of very considerable interest and importance, and well worthy of some attention, and we cannot do better than refer to the very excellent report prepared last year by M. Tisserand, Director of the Department of Agriculture, entitled *Rapport sur les Travaux administratifs entrepris contre le Phylloxera et sur la situation du Vignoble français et étrangers pendant l'année* 1884, and to the result of the conference recently held at the Agricultural College of Montpellier, in which district the greatest activity, intelligence, and forethought have been displayed in the struggle against the ravages of the phylloxera, and where the greatest sacrifices have been made with the object of exterminating that pest. We may also take this opportunity of calling attention to the very valuable and exhaustive information contained in an interesting brochure emanating from another large centre of the French wine industry, the *Annuaire Économique de Bordeaux et de la Gironde*, which is published under the auspices of the Society of Political Economists of Bordeaux. And finally the *Bulletin de Statistique et de la Legislation Comparée*, published in the December number of last year, an article on the wine production of 1883 and 1884, together with a set of tables showing a comparison of the production for each year as far back as 1874, that is to say the information is carried back to the period when the French vineyards, already attacked by the phylloxera, were nevertheless at the maximum of their production.

With this varied information at our disposal, we will endeavour to gauge the present actual condition of the wine industry, and to point out the dangers it has had and still has to encounter, and at the same time to show how far the favourable results anticipated for it in the future are likely to be realised; but before drawing any conclusions, it would be as well to briefly state some few important facts.

The French vineyards which formerly were unrivalled, and excelled in a marked degree those of other European countries, both as regards the quality of their production and the area under cultivation, still continue to hold the first rank in the world; but France is now, owing to the ravages of the dreaded and destructive phylloxera, closely pressed by many countries which have hitherto

been free from the pest, or have only suffered in a mitigated degree from it effects. The following table will show according to M. Tisserand the average production in the principal wine growing countries of the old and new world:—

Countries.	Production.	
	Hectolitres.	Imperial Gallons.
France	34,780,726	765,175,972
Algeria	1,000,000	22,000,000
Italy	27,500,000	605,000,000
Spain	22,000,000	484,000,000
Austria-Hungary	8,500,000	187,000,000
Portugal	4,000,000	88,000,000
Germany	3,695,000	81,290,000
Russia	3,500,000	77,000,000
Cyprus	1,600,000	35,200,000
Switzerland	1,300,000	28,600,000
Greece	1,300,000	28,600,000
United States	1,000,000	22,000,000
Turkey	1,000,000	22,000,000
Cape of Good Hope	700,000	15,400,000
Roumania	700,000	15,400,000
Servia	500,000	11,000,000
Australia	87,900	1,933,800
Total	113,163,626	2,489,599,772

We see therefore from the above that the total wine production of the world is estimated at 113 million hectolitres, or 2,489 million gallons; and this in itself, it may be observed, is not such an enormous amount. The aggregate population of Europe and America may be stated approximately as 500 millions, and if all the races were wine drinkers, these 2,489 million gallons would only represent a proportion of 4·9 gallons per head of population; whereas when the vines in France were at their best, the consumption of wine in that country averaged between 25 and 30 gallons per head.

If then all the civilised races were to become consumers of wine to the same extent as the French people, it would be necessary for the actual production to be increased six fold, otherwise the supply would be quite unequal to the demand; but it must be understood that in this we are merely putting a supposititious case, as it is in the highest degree improbable that such a condition of things will ever occur. There always have been, and always will be drinkers of cyder, beer, and tea, without taking into consideration total abstainers, yet notwithstanding this, it is not uninteresting to compare the wine production, with the demands that *might* be made upon it, if only to dissipate the fears of those pessimists among viticulturists who regard with such very gloomy apprehensions the approach of the time when the price of wine will fall to the lowest figure by reason of the excess production.

Without deluding ourselves with the idea that the Englishman

will ever entirely renounce his pale ale and his gin, the Russian his *samovar*, and the German his beer, yet it may reasonably be expected, if only the wine industry is not harassed by any mischievous fiscal legislation, if the producers will maintain the reputation of their wines for wholesomeness and purity, and if the adulterations that of recent years have been so largely practised show a tendency to decrease, that the consumption of wine will follow the same development as the production.

The figures we have quoted above, and which have been taken from M. Tisserand's very able report, relate as regards France to the harvest of 1884, which as compared in its results with that of the previous year shows a slight falling off, but it is an improvement on that of the year 1882. We must add however that the *Annuaire Économique de Bordeaux et de la Gironde*, issued under the auspices of the Society of Political Economists of Bordeaux, furnishes certain particulars as regards the wine harvests which differ materially from the information supplied by the French Agricultural Department. In the case of Italy, Spain, and Portugal, the figures showing the estimated results of the most recent wine harvests are identical, but as regards Austria-Hungary the discrepancy is most marked. For example, in M. Tisserand's report the vintage in that country is stated as 8,500,000 hectolitres or 187 million gallons, while the Bordeaux publication gives 14 millions or 308 million gallons as the production. Again, for Germany the discrepancy between the statements of M. Tisserand and the Society of Political Economists is very considerable, the former estimating the wine production at 3,695,000 hectolitres (81,290,000 gallons), while the latter puts it at 5,959,000 (131,000,000) gallons. The production of Turkey is estimated at 3 millions of hectolitres or 66 million gallons by the Bordeaux Society, and at 1 million or 22 million gallons by the Agricultural Department. And finally the Director of Agriculture appears to entirely ignore one wine growing country in South America, viz., Chili where according to the Bordeaux authorities the estimated production averages 22 million gallons annually.

Notwithstanding these discrepancies, the aggregate wine production of the world may approximately be estimated at between 2,500 millions and 2,750 millions of gallons, of which France contributes about a third, if we accept the former figure as representing the total wine production of the world, or taking the latter, rather more than a quarter. Formerly the French vineyards produced more than half, perhaps even as much as two-thirds, of the whole of the wine consumed throughout the world, and not only was the aggregate French production greatly in excess of that of the present day, but the yield of the vintages of Italy, Spain, Portugal, and Austria-Hungary was considerably less; while Algeria as a wine growing country had not then commenced to exist.

The total yield of the French vintage, which in each of the years 1870 to 1875 was most abundant, has now fallen off to the extent of one-third, and for the last four years the production has not varied to any very considerable extent. A reference to the

following table will show the results of the wine harvests in France in each year from 1874 down to the latest date, according to the estimates of the Director of Indirect Taxation :—

Years.	Production.	
	Hectolitres.	Gallons.
1874	63,146,000	1,389,212,000
'75	83,836,000	1,844,392,000
'76	41,847,000	920,634,000
'77	56,405,000	1,240,910,000
'78	48,729,000	1,072,038,000
'79	25,770,000	566,940,000
'80	29,667,000	652,674,000
'81	34,139,000	751,058,000
'82	30,886,000	679,492,000
'83	36,029,000	792,638,000
'84	34,781,000	765,182,000

It will be observed from the above that the years 1879 and 1880 were characterised by a marked decrease in the wine crop, but since then the production has remained almost stationary, with but very slight variations, which may be taken rather as the result of climatic influences than of any extension or diminution of the area under vine cultivation. There can be no question that this production is far from being sufficient to meet the requirements of consumers in France. During the four years ended 1877 the quantity of wine imported into France was very small, while the exports were considerable, the former averaging about 590,000 hectolitres or 13 million gallons, and the latter amounting to 3,550,000 hectolitres or 78 million gallons annually, an excess of exports over imports to the extent of 65 million gallons. But during the seven years ended 1884 this condition of affairs considerably changed, as the imports into France rose until they reached an average of 139 million gallons annually, while the exports only amounted to 60 millions, thus leaving a balance of 79 million gallons in favour of the imports; while if we take the four years ended 1884, the average annual imports rose to 179 millions and the exports fell to 59 millions, so that the net excess of imports over exports amounted to an annual average of 120 million gallons.

So it will be seen how disastrously the condition of the French viticultural industries has been affected by the ravages of the phylloxera. It may be argued that if France purchases from abroad 179 million gallons of wine, which by reason of the manipulation to which it is subjected on its arrival really represents about 260 million gallons ready for consumption in the country, while it only sends abroad about 60 million gallons, it is the movement of the values rather than of the quantities which is less disadvantageous to the country.

The wines exported from France are of a superior quality, and command a higher price than those imported. During the year 1884 the value of wine imports amounted to 339 millions of francs,

and of the exports to 237 millions, so therefore France buys from abroad to the extent of 100 millions of francs more than it sells, while it was only about eight or ten years ago that the exports rose to an average of 250 millions of francs annually, and the imports did not exceed a value of from 25 to 30 millions. But at the best a comparison of the imports and exports of wine conveys but a very faint impression of the incalculable injury inflicted on the viticultural interests of France by the ravages of the phylloxera. The 180 millions of gallons annually imported would have been largely exceeded if a considerable proportion of the French population, which some ten or fifteen years ago comprised large consumers of wine, had not given up this beverage and resigned themselves either to drink nothing but water, or to considerably restrict their consumption of wine. This change of habit and custom has become particularly noticeable among a large section of the rural population of the Midi. And again, it would have been impossible to maintain the supply of wine necessary to meet the demands for this limited consumption, even with the assistance of large importations, had it not been for the enormous extent of land taken into vine cultivation in proportion as the ravages of the phylloxera extended.

The area under vine cultivation in France before the phylloxera first made its appearance, is estimated by the Director of Agriculture as 2,485,829 hectares or about 6,200,000 acres, and it is stated that the ravages of the phylloxera have totally destroyed more than 2,500,000 acres, and that 1,660,000 acres in addition have been attacked though they have not entirely succumbed. From this it will be seen that if the original area planted with vineyards had not been considerably extended, France at the present time would be in possession of no more than 3,700,000 acres of vines, of which 1,600,000 acres would be partially destroyed and 2,100,000 acres only in a healthy condition; but it appears that the actual area planted is about 5,200,000 acres, from which it results that from the commencement of the malady an additional extent of 1,500,000 acres has been added to the original area. Out of this number 132,000 acres of vineyards have been replanted with American vines. So 1,400,000 acres of land which hitherto had been under various crops are now covered with vines, and partly compensate for the area destroyed by the phylloxera.

Those departments which are fortunate enough to own at the present day an extent of vineyards greater than before the advent of the phylloxera are comprised within two districts, the South, where vine cultivation formerly was in a very backward condition, and in the Centre. In the former may be included the Departments of the Aude, in which the area under vineyards has increased by 95,000 acres since the phylloxera first made its appearance; the Gers, where the area has increased by 85,000 acres; the Tarn, by 22,000; the Tarn et Garronne, by 12,000; the Landes, by 7,500, and Corsica by 3,700 acres. As regards the Departments of the Centre, almost all have a larger area under vine cultivation than before the plague. The Loire et Cher has increased to the extent of 22,000 acres; the Vienne, 20,000; Coté d'Or, 17,000; Puy de Dome, 12,000;

Indre et Loire, 6,200; Indre, 6,200; Cher, 5,000; Maine et Loire, 5,000, and the Seine et Marne to the extent of 3,000 acres.

The above may be taken as the fortunate departments, but there are unhappily others in which the condition of the viticultural industry has become most deplorable, the Herault in particular, which has suffered a total loss of about 230,000 acres of vineyards. Next comes the Department of the Charente, which is represented by a total loss of 205,000; the Charente-Inférieure, 200,000; the Gard, 197,000; the Var, 118,000; the Bouches du Rhône, 83,000; the Lot-et-Garonne, 70,000; the Drôme, 67,000; Vaucluse, 50,000; the Ardèche, 42,000; the Rhône, 35,000; and the Pyrénées Orientales, 30,000. Gironde has only lost 17,000 acres, the total vine area being now represented by a total of 370,000 as compared with 387,000 before the malady.

It was only after numerous delays that it was resolved to take such active steps as might be necessary with a view to effectually check the ravages of the plague, and concerted measures with this object were adopted generally throughout France, and particularly in the Departments of the Hérault, Gard, Charente, and Gironde, and we cannot pay too high a tribute of praise and admiration to those engaged in the viticultural interests in France for the skill and intelligence which they have displayed in arresting the destruction of their vineyards by the phylloxera, and their efforts, which are likely to be crowned with complete success, are the more to be commended when we consider that they have engaged almost single-handed in the struggle, the State having hitherto failed to render any effective assistance whatever.

Not only have the vineyard proprietors engaged in the struggle against the phylloxera been forced to rely solely upon their own unaided exertions without any encouragement from the State, but it may even be said that the first serious obstacle they had to surmount was the harassing and vexatious regulations laid down by the legislature.

It will be seen from the above that the total wine production of the world amounted to between 2,500 and 2,750 million gallons, to which France contributed to the extent of 770 millions, and we have shown that the area under vineyards in France, which amounted to 6,200,000 acres before the phylloxera made its appearance, now represents an extent of 5,200,000 acres, notwithstanding the fact that more than 3 million acres have been attacked by the plague. It may therefore be taken that an additional area of 1,400,000 acres has been taken out of other cultivation and placed under vineyards. If then the work of replanting the ruined vineyards is making rapid progress, as so many of those who are interested in this particular branch of national industry are inclined to believe, and if effective measures are taken to, at once, plant fresh vines in place of those which are destroyed, it may confidently be expected that in the course of a few years France, instead of being represented by a total extent of 6,200,000 acres of vineyards, will have a wine area of about 7,500,000 acres. And if to the national production, which would thus be largely increased, we were to add the excess production of Italy, Spain, Austria-Hungary, Greece, and Algeria, and

of the United States, in which country great progress has recently been made in viticulture, it is more than probable, as a certain section of the French vine growers fear, that the wine industry will pass through the same crises as those which have been experienced by the sugar, wheat, and coffee trades.

The wine grower of the present day is struggling against very heavy odds, as not only does the cultivation of the vine necessitate a much greater outlay than formerly, but he has to contend both against the insidious attacks of the phylloxera and the old enemy of the vine, the oïdium, which though continually conquered, is still rejuvenescent, and has to be overcome ; and in addition there is the mildew and the *antrachnose*, two more or less destructive parasites of the vine, which ten years ago were comparatively unknown. While palliative remedies are applied with much success against the first, it appears that vineyard proprietors are still at a loss to find effective means of preventing the two last mentioned parasites from doing a vast amount of damage to the grapes.

Among other remedies which have from time to time been applied with varying results may be mentioned sublimate of sulphur, sulpho carbonate of potash, bisulphide of carbon, sulphate of iron, and sulphate of copper, with many insecticides, none of which have been found entirely successful. Vine culture at the present day is far more expensive and is attended with infinitely greater risks than formerly. It was given in evidence some little time ago by one of the largest vineyard proprietors of the Medoc, that the expenses in connection with the cultivation of his best producing vines amounted to as much as 2,000 frs. the hectare, or about 32*l.* the acre. It is well known that in the Mediterranean zone, where the commoner description of wines is produced, the cost of cultivation averages from 600 to 700 frs. the hectare, that is from 10*l.* to 11*l.* the acre, and in some cases this average is considerably exceeded.

This then will in some measure account for the pessimist views expressed by some of the vineyard proprietors. On the one hand they regard with gloomy apprehension the prospects of a rapid increase in the wine production of the world, accompanied by a serious fall in prices; and on the other hand they find their expenses rapidly augmenting, and their reputation injured by the system of falsification and adulteration now so largely practised, and which the period of inflated prices contributed in no small degree to bring about.

We will next consider the question of the method by which the wine industry may be preserved from the difficulties and dangers through which another important branch of national wealth, viz., the sugar industry, has recently been passing. We are certainly disposed to believe that the price of wine during the course of the next few years will manifest a decided tendency to fall rather than to rise, but even should this anticipation be realised, it will not affect proprietors to any very serious extent, and it certainly will not have the effect of ruining them as some appear to think. If legislation does not affect them adversely, there is no reason why the cultivation of the vine should not prove

one of the most remunerative, as it undoubtedly is one of the most interesting and scientific of all French industries.

That the reconstitution of the French vines is rapidly progressing there can be no question, and we are anticipating from it the very happiest results. M. Tisserand in his last official report calls attention to the fact that in 1884 52,777 hectares, or about 130,000 acres, as compared with 28,000 hectares, or about 70,000 acres, in the preceding year, had been planted with American vines, the roots of which are considered to be able to successfully resist the attacks of the phylloxera. He goes on to say that these American vines are distributed among thirty-three departments, but as a matter of fact it is only in five or six, chiefly Hérault, the Gard, Charente and Charente Inférieur, Gironde and Var, that the system of planting American vines has been adopted to any considerable extent. In one department alone, namely, Hérault, more than two-thirds of the whole of the American vines existing in France have been planted and cultivated with great success.

It is for this reason that we have paid so high a tribute of praise to cultivators and vineyard proprietors in Montpellier and the neighbourhood for the skill, courage, and intelligence they have so conspicuously displayed in their resistance to the attacks of the phylloxera. During the present year the system of planting American vines has largely developed, as we find that in one department alone, namely Hérault, it is estimated that 20,000 hectares of new land have been laid out with these plants, so that when the time arrives for M. Tisserand to publish his next report upon the phylloxera, we may expect to find it stated that instead of 52,000 hectares of land being under American vines, the number will in all probability have increased to over one 100,000—a consummation devoutly to be hoped.

Wonderful as this progress may be, representing as it does such terrible sacrifices, for in reconstituting a vineyard by replanting with American vines, an enormous expenditure of both time and money is absolutely necessary: the soil must be dressed, the plants carefully selected, only those being taken which are likely to adapt themselves to French soil and climate, and they must be prepared in such a manner as to admit of the incomparable varieties of French vines being grafted upon them, &c.; yet the fact must not be overlooked that even these extensive plantations, prepared and cultivated at enormous cost, do not represent a net gain to the country, but merely fill up the void caused by those vineyards which have succumbed to the attacks of the phylloxera and other diseases of the vine.

It is true that at the present day the phylloxera appears to be making less progress than at the commencement of its visitation, and its effects are not so disastrous, for we find that in 1883 the number of districts attacked was eighty-eight, while it is now ninety-two; and according to the most reliable statistics, which however at the best can only be taken as approximate, the land laid waste in 1883 amounted to about 1,605,000 acres, and now represents an extent of 1,660,000, and the difference between these two amounts, corresponds almost exactly with the excess acreage under

American vines in 1884 over that of the preceding year. It would seem therefore that what is gained for the viticulturist by the planting of American vines is balanced by the loss effected by the ravages of the phylloxera. It is true that more vigorous measures are now adopted in the struggle against the pest, for besides the system of grafting French vines on American shoots, recourse has been had to many effective remedies, and among others, submersion, treatment by bisulphide of carbon and sulpho-carbonates, have done much to save a considerable number of vines, or at least have contributed in great measure to prolong their existence.

Submersion has in many cases proved eminently successful, but in some instances it has completely failed to arrest the progress of the disease. In 1884 it was applied to 58,000 acres, as compared with 44,500 in 1883, while bisulphide of carbon, which last year was applied to 83,600 as compared with 58,000 acres in 1883, is regarded by some few sanguine vine growers as the only effective remedy, and by the generality as merely a temporary expedient. Finally sulpho-carbonates, which labour under the disadvantage of being a most expensive remedy, were applied to 15,700 acres in 1884 as against 7,700 in 1883. In all 157,300 acres were last year subjected to treatment either by submersion or insecticides, as compared with 110,200 acres in the preceding year, thus conclusively proving that more vigour is now infused into the efforts to successfully resist the dreaded malady and to mitigate its evil effects.

Notwithstanding these efforts a considerable number of old vines have been rooted up, and it is very probable that the work of destruction will be continued until the whole of the old vines have ceased to exist; and this is the more to be regretted as the cost of cultivation of new plantations has become so heavy that it is doubtful whether a considerable period will not elapse before the whole of the ruined vineyards are replanted, and it is evident that for some time to come a large extent of land which had previously been under vines will have to be placed under other cultivation. So therefore French vineyards, which before the invasion of the phylloxera covered an area of 6,200,000 acres, are now represented by an extent of 5,200,000 acres, and notwithstanding the various treatments to which they have been subjected, the old vines continue to be largely destroyed, while on the other hand the use of American vines has been adopted, the shoots of which are planted alone or with the best descriptions of French vines grafted upon them, and the French vines themselves are planted in sand or are merely subjected to treatment by submersion and insecticides. Although the work of destruction and reconstitution has been going on simultaneously, the latter is making the greater progress, as a far larger extent of vineyards is now replanted than destroyed. And yet in spite of this it will in all probability be long before the country will be in possession of the same extent of vineyards that existed ten years ago. It may however be anticipated that the wine production will soon amount to 900 millions of gallons, and rise probably to considerably over this amount; but it is doubtful whether for some time to come it

will attain the same proportion as existed in 1874, namely, 1,390 millions, and many years must certainly elapse before it can equal the production of 1875, which was a year of exceptional abundance, and in which the yield exceeded 1,844 million gallons.

There remains to be considered only the question of the excess production of other countries imported into France, and the system of falsification and adulteration now so largely practised. It has been already stated that the total average wine production of the world may be estimated at between 2,500 and 2,750 million gallons of which France contributes about 770 millions. There remains therefore in round numbers 1,980 millions of gallons for the other countries, and out of this, an amount exceeding 198 millions was thrown upon the French markets during the year 1883, while the total exports from France during the same period did not exceed 55 millions. In some countries vigorous efforts have been made of late years to increase their wine production, and this has been particularly noticeable in Spain, Italy, Greece, and Algeria. On the other hand it must not be forgotten that certain districts of Spain, for example Andalusia, Catalonia, and even Arragon, have suffered severely from the ravages of the phylloxera. And the same may he said of Portugal, while Italy is only now beginning to feel the effects of the devastating plague. If the dreaded insect once gains possession of the vines, it is hopeless to expect that it will be exterminated until the greatest havoc and destruction have been wrought by it; and although all those countries which are afflicted with it must necessarily have gained from France much useful knowledge and many valuable hints as to the most effective methods of resisting its attacks, yet it is far more likely that in the future there will be a decided tendency on the part of Spain, Italy, and Hungary to a diminution rather than to an increase in the wine production in these countries.

As regards the condition of the wine industry in the United States of America, the production has not as yet assumed any very vast proportions, the average not having yet attained 1 million of hectolitres; and assuming that this industry should become largely developed, France will have little to fear from it for some considerable time to come, as the only effect it will have will probably be to stimulate consumption in the United States itself. And as regards the exports of French wines to this country, there may probably be witnessed a slight diminution, but this will not seriously affect French trade, as the returns already show a considerable falling off, the amount having dropped from 27 million litres in 1872 to 9 millions in 1881.

This decrease in the exports of French wines to America may in great measure be attributed to the almost prohibitive customs tariff of the American Union.

France again has little to fear from Australia as a wine growing country, the viticultural industries in the latter being in far from a flourishing condition, as the average production now only amounts to between 1,500,000 and 1,760,000 gallons, and there appears to be little or no probability of this amount being exceeded; while as regards the production of the French colonies,

that of Algeria will only help to fill the void which must soon be caused by the failure in the wine harvests of Spain, Italy, and Hungary.

The worst enemy that the French vine growers have to contend against is adulteration, and the introduction into their country under the name of Spanish wines of a mixture of water, potato spirit, and various compounds, among which the pure juice of the grape holds a very insignificant place. The legislature which permits the introduction over the French frontier of a decoction of water, potato spirit, and other noxious ingredients, while it imposes excessive taxation on wine in the country itself, is actually offering a bounty to imported German spirit and to adulterated wines at the expense of the French wine grower. This is not only an inconsistency, but it bears very hardly upon the French wine industry, and creates a grievance of which vine growers have good reason to complain.

French viticultural interests again suffer very considerably from the adulteration of their own wines abroad. These adulterations and falsifications, of which French vine growers are the victims and not the authors, not only rob them of their reputation, but have in some instances been instrumental in closing many profitable markets to them. To this system of adulteration may in some measure be attributed the serious falling off that has for the last eight or ten years been experienced in the exports of French wines to the United States. On this point the *Annuaire Économique de Bordeaux et de la Gironde*, from which we have already quoted, is particularly eloquent, and recently devoted to the subject a very interesting article dealing exhaustively with the question of the foreign adulteration of French wines, and it gave some very curious details relating to the extensive trade which is now carried on in German wines shipped under the name of genuine French wines. The following particulars are taken from the trade circular of a Hamburg firm, which appears to offer the very best brands of French wines at a price representing at a moderate computation less than a tenth part of their actual marketable value. For example, Château Lafitte is quoted at 130 francs the hogshead, whereas genuine Château Lafitte could nowhere be obtained under 2,000 or at the least 1,500 francs.

Bordeaux Wines per Hogshead.

	Marks.*		Marks.*
Château Lafitte	110	Margaux	100
,, Latour	110	Saint Estèphe	100
,, Margaux	110	Moulis	100
Graves	105	Saint Emilion	95
Château Haut Brion	105	Paulus	95
Mouton	103	Château Yquem	115
Pape Clement	105	Bourgeois	110
Pontet Canet	103	Sauternes	100
Saint Julien	100	Barsac	100
Pauillac	100		

* The mark is equivalent to one shilling sterling.

This system of trading is in the highest degree immoral, and there should certainly be some means by which French vine growers could protect themselves against such flagrant abuses. If the German Government is powerless to prevent such gross frauds, and it is difficult to imagine that it really can be, it devolves upon French proprietors to take the initiative, and to devise such means as may seem to them best to put a stop to the iniquitous practices; for example they might at least form themselves into associations, or syndicates, and enlighten their foreign customers as to the frauds that are daily being practised upon them, and thus at the same time they would do much to maintain their reputation as the finest wine growers in the world, and retain the best markets for their productions.

It behoves French viticulturists besides to strain every nerve to give the very finest tone to their productions, and this is the more to be desired as owing to the great outlay now necessitated by the new system of viticulture all wines not of the finest brands have for some time past shown a disposition to deteriorate in value. The department of Languedoc has been exceptionally fortunate in improving the quality of its ordinary vines, and this has been effected by a system of grafting which has resulted in producing vines immeasurably superior to the old varieties. One man in particular, M. Bouschet, has eminently distinguished himself by his successful system of grafting, and there are many excellent descriptions of grapes, chief among them being the Alicante, Henri Bouschet, Terret Bouschet, Aramon, Teinturier Bouschet, &c., which owe their origin to him, and which have gained a well deserved reputation for the excellence of the wine they produce. We may take this opportunity of remarking that it is a matter of some surprise that a Government which professes to seek out and reward merit, has not up to the present deemed worthy of any special honour or distinction a man distinguished in the scientific and literary world, who has for many years past rendered valuable services to one of the most important branches of French national wealth.

Though the Government has not entirely withheld its co-operation in the struggle that has so long and so successfully been carried on against the attacks of the phylloxera, its assistance has been of a very passive nature. For a long time even it was opposed to the introduction of American vines into France, and the State appeared to consider that it had done all that could reasonably have been expected from it by voting a sum of 1,200,000 frs. as a subsidy to associations formed with the object of resisting the attacks of the pest, and this probably was the reason of its resisting the numerous appeals that were made on behalf of the ruined proprietors for a remission of taxation in consequence of the almost total failure of the wine harvests. It put off from time to time the construction of the canals in the Midi, a work which was imperatively needed, and the necessity for which had so often been urged upon it, and it would really appear that the only service it has ever rendered to the wine industry of France was in instituting inquiries and experiments by the learned professors of the Agricultural College of Montpellier.

At the recent conference held at this college the viticulturists of the Midi submitted the following proposals: (1) a reduction of the wine duties as a measure of protection against foreign competition; (2) a revision of the railway tariffs on those lines which impose a lower rate of carriage on Spanish wines conveyed direct to Paris, while French wines have to pay the full rate from Cette to Paris; (3) the immediate construction of the Rhône canal, the execution of which has been postponed from time to time during the last fifteen years, and (4) the carriage at an ordinary rate of American and French plants to be used in replanting French vineyards, a class of goods on which an excessive rate has hitherto been imposed by the different railway companies.

These demands are not unreasonable, the viticulturists ask for no special favour to be shown, no special privilege to be accorded, but only for a fair measure of justice to be meted out to them. The time has surely come for the Government to satisfy the legitimate demands of those, who, although sorely tried and discouraged, have never relinquished their efforts to defend and protect that important branch of national industry they so worthily represent. If the Government will only do its duty in the matter, private individuals will not fail in theirs, and although the successful cultivation of the vine has become more and more difficult, and international competition more keen, there is every reason to hope that the efforts of French viticulturists will be eventually crowned with complete success, and that the near future will witness the inauguration of a new and triumphant era for the wine industry of France.

II.—*Inland Revenue Report*, 1884-85, *with some Retrospective History.*

The following is the Twenty-eighth Report of the Commissioners of Her Majesty's Inland Revenue to the Lords Commissioners of Her Majesty's Treasury:—

"Fifteen years have elapsed since the Board of Inland Revenue published any general report of the taxes under their management, and it appears to us desirable, for several reasons, that such a publication should be supplied.

"The last general report was issued in 1870, and it is now out of print. Copies of it have been in constant demand, not only for strictly official purposes, but also for the sake of statistics, and for the various information contained in it, which is often found valuable in inquiries made on behalf of foreign countries.

"We have divided our remarks into four separate parts:—Excise, stamps, taxes, and establishment.

"We have also furnished three appendices. In the first we have dealt with the special figures and transactions that belong to the financial year 1884-85. In the second we have quoted from former reports the descriptions of some taxes which were repealed

before the year 1870; while in the third will be found complete tables of accounts of all the duties under our control from the year 1869-70 down to the present time.

"The following letter from Mr. Gladstone has been addressed to the chairman of our board after reading a proof of the report:—

"'1, *Richmond Terrace*,

"'My dear West, "'*July 8th*, 1885.

"'This is the first day on which I have been able to secure a quiet hour for the examination of the twenty-eighth report of your board, from which I learn, without surprise, how much we are indebted to your colleague, who was Mr. Northcote.

"'It appears to be a most careful and most valuable work.

"'The only point of mere detail which raised a question in my mind was the reference in p. 74 to the Act of 1853.

"'It is there said that the rate of income tax was fixed at 5*d.* for seven years.

"'I rather think this is not accurate.

"'It was, perhaps, hardly worth while to refer to this small point.

"'Speaking more at large, this document reminds me that during the whole period of my official connexion with the finance of this country, I have had no greater pleasure than in my communications with the department of inland revenue.

"'I have always found it a model, in its heads and principal officers, of enlightened ability and untiring zeal.

"'So it was when I began to know it intimately thirty-three years ago, and so I have found it down to the time when I resigned the charge of finance, and I rejoice now in closing the door of office behind me to have a new proof, through your kindness, that it is likely to be in the future what it has been in the past.

"'Believe me always sincerely yours,

(Signed) "W. E. Gladstone.

"'*Algernon E. West, Esq.*'

"This letter must certainly be considered far too flattering to ourselves, but in justice to the whole of the inland revenue service, both past and present, we feel it right that such invaluable testimony to the merits of their worth should be made known both to themselves and to the general public.

"As to the particular point raised by Mr. Gladstone, we have been able to satisfy him that our statement is correct.

"There is only one subject connected with the financial results of the year that has just expired, to which we feel bound to call particular attention. We allude to the marked success that has attended the efforts made to secure the prompt collection of the additional income tax that was imposed during the autumn session of 1884.

"We cannot refrain from claiming some credit in this respect for all the branches of our service engaged in the collection of the income tax, while we are, at the same time, desirous of acknowledging the great assistance they have received from the clerks to

the commissioners, and other officers employed by the district commissioners.

"We believe that the only two occasions on which additional income tax has been imposed at a late period of the year have been in 1867 and in 1884, in both of which years an addition of one penny has been made to the rate of the income tax during an autumn session.

"In 1867-68, the produce of the additional penny fell considerably short of the amount at which it was estimated; but we are happy to be able to state that the contrary has been the case in 1884-85."

III.—*Foreign Trade of the United Kingdom.*

The following is the report of Mr. Giffen to the Secretary of the Board of Trade on recent changes in the amount of the foreign trade of the United Kingdom, and the prices of imports and exports down to 1883:—

"In conformity with your directions I have continued and extended the tables of the prices of imports and exports, and of the fluctuations in the amount of the foreign trade of the country, contained in the Parliamentary Papers C–2247, Session 1879; C–2484, Session 1880; and C–3079, Session 1881. The result is contained in the annexed tables and in a few observations which I now beg leave to submit.

"The general object of the investigation made in these reports has been to show the effect of changes in price on the aggregate values of imports and exports, and it seems unnecessary to repeat at any length what has been said as to the utility of such an investigation in the former reports. The amounts of our imports and exports, and their nominal values, are plainly two very different things. If prices should happen to fall between two given dates when the aggregate nominal values of imports and exports decline, or if they should happen to rise when the aggregate nominal values increase, it is clearly quite possible that there may be no corresponding decline or increase in the quantities of goods imported or exported. Quantities may even increase when aggregate nominal values decline, or may fall off when aggregate nominal values increase. Hence it is necessary in comparing imports and exports at different periods to allow for changes of price. There is the more reason for this because it is also found on investigation that prices of leading articles of trade often rise or fall together, and that a general movement in prices can be traced, so that the values of imports and exports are at one time greater than they would otherwise be by reason of a general rise of prices and at another time lower by reason of a general fall.

"It seems unnecessary also to repeat what has been said in former reports as to the general method of investigation followed, viz., the use of index figures based upon the proportion of each

article of import and export to the total imports and exports; the calculation of the rise or fall of price of each article on that proportion; and then the final grouping together of the rises or falls thus calculated so as to show how much the index number falls to be increased or diminished in a given year as compared with the normal standard selected for comparison. The soundness of this method of deducing average rises or falls of price is now generally admitted; and for a full explanation of the method I may refer specially to the first of the above reports, C–2247, Session 1879, pp. 3 and 4.

"The principal changes in the present report compared with the former ones are the following:—

"1. The tables of prices are continued down to 1883, that is three years later than in the last report, which ended with the year 1880. It was my original intention when preparing these tables to have included the year 1884, but it seems desirable, on account of the great interest of the subject, that publication should no longer be delayed. The figures for the year 1884 can be continued and included in a subsequent report.

"2. The tables of prices have also been continued backwards so as to include every year since 1840 as regards the exports, and every year since 1854 as regards the imports, 1854 being the year in which real or market prices for the imports as distinguished from stereotyped official valuations were first ascertained. There have been considerable difficulties in doing this owing to changes from period to period in the designation of the articles, but the final result, it is hoped, is not unsatisfactory. The proportion of the index numbers to the whole imports and exports, in going back over such long periods, has had to be reduced as compared with the proportion of the index numbers used in former reports, because in the later period, with which alone the former reports dealt, new articles occur, not to be found in the records of imports and exports for the earlier period, and which are therefore necessarily omitted in the present report. The variations thus caused are, however, not generally important, as will be seen from the tables annexed, in which the difference in the later years caused by the omission of the newer articles from the index number that must be used in covering the whole period is stated in italics. The difference in the case of the exports does not amount in any year to 10 in a total index number of about 75, and in the case of the imports does not amount to 3 in any year in a total index number of over 80.

"3. Additional calculations have been made as to the nominal amount of the imports and exports in particular years, according to the prices of some one year only, a year of low price, 1883, being used for this purpose as well as a year of high price, 1873, which was used in former reports.

"The changes effected by prices in the volume of trade in the additional recent years included since the last report can be very shortly stated. Up to 1879, it will be remembered, a great part of the diminution of the nominal values of the exports between 1873 and that year was to be accounted for by a reduction of price only.

In 1880 there was a slight recovery of price and a great increase in trade. There were similar changes, though not so marked, as regards the imports. The new facts are, that in 1881-83 there was a further increase of trade but without any general sustained rise of prices, even as compared with 1879. According to market reports prices were higher in some portion of the period, but both in 1881 and 1883, for which averages have been worked out on the index number, prices on the average, as regards the exports, are no higher than in 1879, while, as regards the imports, although the prices of 1881 are on the average a little higher than those of 1879, those of 1883 are hardly any higher. Eliminating the element of price, the quantity of the foreign trade in 1881-83 must be considered to have been greater than in any previous year.

"As regards the exports the changes in the new index number 65·8 have been as follows since 1873:—

1873	+ 19·93	1879	− 6·10
'75	+ 8·67	'81	− 6·26
'76	+ 2·25	'83	− 5·95
'77	− 0·40		

"And as regards the imports the changes in the new index number of 81·16 are—

1873	+ 4·43	1879	− 10·30
'75	+ 0·25	'80	− 6·39
'76	− 3·61	'81	− 6·99
'77	− 1·48	'83	− 9·43
'78	− 7·04		

"In other words, whatever increase in imports and exports took place between 1879 and 1883 took place irrespectively of any increase of price. The changes in the nominal values of imports and exports in those years were, however, as follows:—

	Imports.	Exports.
	£ mlns. sterling.	£ mlns. sterling.
1879	363	191½
'80	411	223
'81	397	234
'82	413	241½
'83	427	240

"The increase in nominal values between 1879 and 1883 thus corresponds to an increase in quantities. The rise in nominal values in the intermediate years in the case of the imports may be partly due, to the extent of 4 or 5 per cent. according to the change of the index number, to a rise of price, but as between 1879 and 1883 there is no material change of price to note, and the increase of nominal values accordingly corresponds to an increase of quantity.

"The greater volume of the trade is brought out strongly when we compare the value of the imports and exports in 1879 and 1883, computed at the prices of 1873, with the declared values of the imports and exports of that year. As regards the exports, the comparison of the articles comprised in the index number gives the following results:—

Exports of Enumerated Articles of British and Irish Produce at the Prices of 1873, *and at the Actual Declared Values compared.*

	Declared Values.	Values Computed at Prices of 1873.
	£ mlns. sterling.	£ mlns. sterling.
1873.....	172	172
'79.....	122	174
'83.....	146	212½

"Thus the exports of 1873, which were the largest on record nominally, were really exceeded by those of 1879 in the proportion of 174 to 172, and by those of 1883 in the proportion of 212½ to 172, or by nearly 25 per cent. The figures of 1879 and 1883, showing smaller nominal values, in the former of about 30 per cent. and in the latter about 15 per cent., do not correspond to any similar changes in quantity, the quantities in 1883 at least having greatly increased.

"A similar comparison as regards the imports gives the following results:—

Imports of Enumerated Articles at the Prices of 1873, *and at the Actual Declared Values compared.*

	Declared Values.	Values Computed at Prices of 1873.
	£ mlns. sterling.	£ mlns. sterling.
1873.....	308	308
'79.....	289	349
'83.....	336	403

"Thus the imports of 1879, which show a nominal decrease of about 6 per cent. compared with those of 1873, really increased by nearly 13 per cent., and the imports of 1883, which show a nominal increase of about 10 per cent. only compared with 1873, actually increased about 30 per cent.

"It is quite certain therefore that the volume of our foreign trade was unprecedentedly large in 1883, but the changes as compared with former years, owing to differences of prices, are not actually shown by changes in aggregate values.

"Rectifying the total values of imports and exports recorded according to the proportionate changes shown as above in the aggregate for enumerated articles only, we should get the following comparison:—

Declared Values of Imports and Exports in 1873, 1879, *and* 1883, *compared with the Computed Values, on the assumption that the Values of the Whole Trade are affected by Differences in Prices as are the Values of Enumerated Articles.*

IMPORTS.

	Declared Values.	Values Computed at the Prices of 1873.
	£ mlns. sterling.	£ mlns. sterling.
1873.....	371	371
'79.....	363	438
'83.....	427	512

EXPORTS.

1873.....	255	255
'79.....	191½	273
'83.....	240	349

"Thus, if our imports and exports in 1883 are valued at the prices of 1873, the former would exceed 500 million pounds instead of being only just over 400 million pounds, and the latter would be 349 million pounds instead of being only 240 million pounds. These totals, as compared with those of 1873, show the real progress which has taken place.

"In former reports I have called attention to the importance of such figures, not only with reference to the proper mode of stating the increase or decrease of imports and exports from time to time, but with reference to questions as to the profitableness of our foreign trade and the return to British labour and capital at different periods, and the fact that as our exports, even of so-called British and Irish produce, include a large amount of raw material previously imported, many allowances have to be made in making comparisons at different periods of the amount of work done by British labour and capital represented in the exports. I do not propose to add any fresh illustrations from the present figures. It is plain that for the purposes of comparisons on such points minute analysis of the figures is required.

"With regard to the use of the tables for back years, previous to those dealt with in former reports, I have only a few remarks to make. The use of an extension of the tables backwards is obvious. It enables us to make comparisons of the volume of our foreign trade over long periods of time, and throws light on the general question of the history of prices. Although the prices are given for each year since 1840 and 1854 for exports and imports respectively, I have not thought it necessary to work out the rises or falls per cent. upon the index number for more than a limited number of years. The years selected are, however, alternate, or so chosen as to show the characteristics of the different times of

inflation or depression which have occurred since the commencement. The period thus treated being a long one, there can be no doubt that the general course of prices is as well illustrated by this method as if the average changes had been worked out on the index number for each year. There is a regular movement in prices, the course being generally upwards or downwards for a few years in succession, and no single year standing out from those adjacent to it as wholly exceptional. In any case it is open to anyone interested to apply the method here used in any year and ascertain whether any real difference in the course of prices would be made by including more years.

"Dealing with the exports first, as the figures here go back over the longest period, we find that the general changes in the index number of 65·8 from first to last show as follows:—

"*Exports.*

"Increase or decrease of index number of 65·8 in the undermentioned years:—

1840	+ 13·34	1859	+ 0·40
'41	+ 10·95	'65	+ 23·46
'45	+ 6·05	'68	+ 11·42
'48	− 2·43	'73	+ 19·93
'49	− 5·29	'75	+ 8·67
'52	− 6·47	'76	+ 2·25
'53	− 1·14	'77	− 0·40
'54	− 0·95	'79	− 6·10
'55	− 2·75	'81	− 6·26
'57	+ 0·77	'83	− 5·95

"What is noticeable here is that the present low prices are about as low as those of 1848 and 1849, just before the gold discoveries, and that in the period from 1865 to 1875, after the gold discoveries had produced their effect, prices were in maximum years from 20 to 23½ higher, and in minimum years from about 9 to 11½ higher than before these discoveries. Since 1875, however, the range in minimum and maximum years has been as low as the low years just before the gold discoveries, and lower than in years like 1840 and 1841, when the index number fell to be increased by 13·34 and 10·95 respectively. It would be out of place to enter into any discussion here as to the influences at work on the course of prices. It is obvious, however, that whatever the influences may be the course of events is itself plain. While we may take the period down to 1850, and even down to 1853, as a starting point for comparison with the present time, without paying much regard to the differences of price between that period and the present, which are only of minor importance, yet an estimate of the progress of foreign export trade in the interval would be materially affected by the consideration of prices. In 1865, and to a less degree in 1873, aggregate values were materially exaggerated by high prices. The progress up to these dates, looking at nominal values only, appears greater than it

really was, while the subsequent progress, still looking at nominal values only, appears less than it really was. When we go back to 1840 and make that the starting point, the higher range of prices at that time compared with the present throws out all comparisons unless the difference of price is allowed for.

"The effect of these differences of prices, as already explained, can be more directly shown by computing the values of trade in all the years at the prices of one year only. Using the prices of 1883 as a basis we obtain the following comparison:—

Values of Enumerated Articles of Export in the undermentioned Years as Actually Declared and Computed at the Prices of 1883, *compared.*

	Declared Values.	Values Computed at the Prices of 1883.
	£ mlns. sterling.	£ mlns. sterling.
1840	41	32
'50	53	52
'60	97	87
'70	143	113½
'80	143½	138
'83	146½	146½

"The increase of the export trade since 1840 is, by the first column of the above table, dealing with values as actually recorded, only about three-and-a-half times, viz., from 41 millions, the declared value of the enumerated articles, to 146½ millions; whereas by the second column, in which all values are computed at the prices of 1883, the increase is nearly five times, viz., from 32 to the same figure of 146½ millions. The latter rate of increase, it may be stated, corresponds more closely to the increase of shipping business than does the former. It will also be observed that while, by the first column, foreign exports appear to be almost stationary since 1870, the progress according to the second column appears to be continuous from decade to decade, corresponding closely to the increase of shipping and the real increase of trade which has occurred.

"Dealing with the imports in the same way, we begin with the following comparison:—

"*Imports.*

"Increase or decrease of the index number of 81·16 in the undermentioned years:—

1854	− 0·80	1876	− 3·61
'55	+ 3·51	'77	− 1·48
'57	+ 7·08	'78	− 7·04
'59	− 1·39	'79	−10·30
'65	+13·59	'80	− 6·39
'68	+ 5·73	'81	− 9·99
'73	+ 4·43	'83	− 9·43
'75	+ 0·25		

"Here the course of the figures is much the same as in the case of the exports, though it is unfortunately impossible to go quite so far back. The period of high range of prices is from 1865 to 1875, and since the latter date there has been practically no recovery. The maximum and minimum prices have both been less than before. As regards imports as well as exports, it is true that aggregate values were exaggerated in 1865 and 1873 by high prices, while the progress since the last date appears less than it really has been because nominal values have declined.

"While the direction of the course of prices has in both cases been much the same, it is to be observed that the average increase of value in 1865 and 1873 appears greater in the case of the exports than of the imports. It may be suggested that this is not improbably owing to the fact that the exports include a larger proportion of goods dependent on the price of cotton than do the imports, and cotton was specially high in price about the year 1865, owing to the American civil war, and did not return to the prices normal before that event until after 1873.

"As already explained with regard to the exports, the effect of such differences of prices can be directly shown by computing the values of trade in all the years at the prices of one year only. Using the prices of 1883 as a basis, we obtain the following comparison:—

Values of Enumerated Articles of Import in the undermentioned Years as Actually Declared or Computed, and as Computed at the Prices of 1883, *compared.*

	Declared Values.	Values Computed at the Prices of 1883.
	£ mlns. sterling.	£ mlns. sterling.
1855.....	127	111
'60.....	186	159
'70.....	250½	213
'80.....	324	313½
'83.....	336	336

"Here the increase since 1855, by the first column is about 160 per cent. only; while by the second column it is 200 per cent. By the first column, also, since 1870 the increase is about 30 per cent. only, while by the second column it is over 50 per cent. Thus in imports as well as exports progress is shown to be very different according as allowance is made or not made for changes of price."

IV.—*The Society's Jubilee.*

The Jubilee Meeting of the Society was duly held on the 22nd, 23rd, and 24th June, and was attended by numerous foreign delegates and visitors. The programme previously arranged was also successfully carried out.

A special volume is in course of preparation, giving a full account of the proceedings, with lists of visitors and members attending, and the text of the papers read and a report of the discussions thereon. It is hoped that the volume in question will be ready for issue at the opening of the ensuing session, and its publication will be duly announced.

V.—*Additions to the Library.*

Additions to the Library during the Quarter ended 30th September, 1885, *arranged alphabetically under the following heads:*—(a) *Foreign Countries;* (b) *India, Colonial, and other Possessions;* (c) *United Kingdom and its several Divisions;* (d) *Authors, &c.;* (e) *Societies, &c.;* (f) *Periodicals, &c.*

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Austria and Hungary—	
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Ungárns Waarenverkehr mit Oesterreich und Anderen Landern . . . für das halbjahr vom monate Janner bis ende Juni, 1884, und für das halbjahr vom monate Juli bis ende Dezember, 1884. IV Jahrgang. Fol.	
PRAGUE. Bulletin hebdomadaire de la ville de Prague et des communes-faubourgs. (Current numbers)	The Statistical Bureau, Prague
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Accroissement et Densité de la Population, 1831-84. Diagram, sheet	The Administration of Statistics, Ministry of the Interior
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(a) **Foreign Countries**—*Contd.*	
Belgium—*Contd.*	
Degré d'Instruction des Jeunes Gens appelés au Tirage au Sort pour le Service Militaire. (1844-84.) Diagram, sheet Nombre proportionnel (par sexe et par age) des habitants sachant lire et écrire (1790-1874). Diagram, sheet Resultats Généraux du Mouvement Commercial entre la Belgique et les Pays-Bas. 1831-83. Diagram, sheet Tableau des Membres de la Commission Centrale de Statistique depuis sa fondation, 16 Mars, 1841, jusqu'au 1er Mai, 1885. Diagram, sheet	The Administration of Statistics, Ministry of the Interior
Chambre des Representants. Negociations relatives à l'Union Monétaire . . . 8vo. 1885	The Ministry of Finance
Ville de Bruxelles. Bulletin hebdomadaire de Statistique Démographique et Medicale. (Current numbers)	Dr. E. Janssens, Brussels
Académie Royale des Sciences, des Lettres et des Beaux arts de Belgique— Annuaire de l'—. 1884-85. 2 vols., portraits, 12mo. Bulletins de l'—. 3e Série. Tomes vi—viii, 1883-84. Plates, 8vo.	The Academy
China— *Imperial Maritime Customs*— I. Statistical Series. Nos. 3 and 4. Returns of Trade at the Treaty Ports, and Trade Reports for the year 1884. $\frac{26th}{20th}$ issue. Boards, diagrams, 4to. II. Special Series. No. 2. Medical Reports for the half-year ended 30th September, 1884. 28th issue	Sir Robert Hart, K.C.M.G.
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Egypt— Le Commerce Extérieur de l'Egypte pendant l'année 1884. 8vo.	A. Caillard, Esq.
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Resultats Statistiques du Dénombrement de 1881, France et Algerie. La. 8vo. 1883	The Ministry of Commerce

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France—*Contd.*	
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L'Economiste Français. (Current weekly numbers.) Paris	The Editor
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Band v. Landwirthschaftliche Betriebsstatistik nach der allgemeinen Berufszählung vom 5 Juni, 1882. Maps	
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Germany—*Contd.*	
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Diciannovesima Relazione sul Servizio. Postale in Italia, 1883	

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(a) **Foreign Countries**—*Contd.*	
Italy—*Contd.*	
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Movimento Commerciale del Regno d'Italia nell' anno 1884. Fol.	
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Sulla Classificazione per Eta della Popolazione del Regno secondo il Censimento 31 Dicembre, 1881. Diagrams	
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M. Postverket. Generalpoststyrelsens Berättelse om Postverkets Förvaltning under år 1883. (Postal Statistics)	
O. Landtmäteriet. Landtmäteristyrelsens Underdåniga Berättelse för år 1884. (Surveying)	
U. Kommunernas Fattigvård och Finanser. Statistiska Centralbyrans underdåniga berättelse för år 1883. (Poor Assistance)	
General-Sammandrag ofver 1884 års Bevillning . . . (Taxation.) Folio	
Kapital-Konto till Riks-Hufvud-Boken för år 1883. (Finance.) 4to.	
Ofversigt af Sveriges Riksbanks Stållning sammanfattad efter 1884 års bokslut. (State Bank.) 4to.	The Central Statistical Bureau
Riksstat för år 1886. Sm. 4to.	
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JOURNAL OF THE STATISTICAL SOCIETY,

DECEMBER, 1885.

International Statistics, *illustrated by* Vital Statistics *of* Europe *and of some of the* United States *of* America; *being the* Opening Address *of* Sir Rawson W. Rawson, K.C.M.G., C.B., *President of the Statistical Society and of the International Statistical Institute. Session* 1885-86. *Delivered* 17*th November*, 1885.

I had hoped to open this session with notes of rejoicing amid the echoes of our Jubilee, but a dark pall has been thrown over our proceedings by the recent decease, not untimely, but not the less grievous, of so many of our most eminent and most honoured colleagues, that it will be more in unison with your feelings and with my own, if I refer to the great losses which the Society has sustained since we last met, before I enter upon the general subject of my address.

No less than three out of the ten ex-Presidents, whom we numbered among our colleagues as Honorary Vice-Presidents at the end of last session, have died within the last three months.

In Dr. William Augustus Guy, F.R.S., we have lost a pillar of the Society; one who, until his health gave way, never failed by his presence and warm advocacy to support the interests of the Society, and by the value of his statistical contributions to the *Journal* to uphold and enhance its reputation. He became a member of the Society soon after its formation in the year 1839; he filled successively the offices of Honorary Secretary, Editor of the *Journal*, and Vice-President; was President in the years 1873-75, and for many years was Treasurer of the Statistical Club, which holds a social gathering before each of our evening meetings. The fifty volumes of the Society's publications record his industry and high capacity, his professional knowledge and statistical insight. In the list of contributors to the *Journal* contained in the Jubilee volume, he figures far beyond all others as regards the number of his papers, and on a par with the most eminent as regards their value. He has left an indelible record in the annals of the Society by the foundation of the Howard Medal. He taxed his failing

energies to contribute a paper to our Jubilee meeting, and he marked the interest which he felt in the Society up to the last by bequeathing to it a legacy of 250*l.* I am happy to think that I had an opportunity of personally informing him of the creation of the International Statistical Institute, and of his nomination as an honorary member of it, while he was yet able to appreciate the distinction, and to congratulate the Society on so successful an issue of the Jubilee meeting. The conscript fathers of our Society, and many of its younger members, will lament in him a lost personal friend.

Another illustrious ex-President of the Society has passed away. The Earl of Shaftesbury, K.G., had been connected with the Society since 1841. As Lord Ashley he was associated with it in its early inquiries into the state of the population and of elementary schools; and if, since those subjects have been taken up by the Government, and the Society has turned more of its attention to other branches of statistical inquiry, his lordship, who had devoted himself specially to those philanthropic purposes and labours which have obtained for him a world-wide renown, had taken a less active part in the work of the Society, we have felt proud of his continued support, and join in the universal expression of regret at his decease.

In Lord Houghton we have lost another ex-President, of varied and distinguished talent, "whose praises are in every man's "mouth." In Mr. Cornelius Walford we shall miss a valued colleague and a constant attendant at our meetings, whose industry and encyclopædic labours have contributed largely to our records, and qualified him to enlighten and instruct us in our discussions. We shall miss both the distinction of the membership of H.H. Rama Varma, the late enlightened Rajah of Travancore, and his liberality, which prompted him to contribute a handsome subscription to the Jubilee Fund.

The Society has but few lady members, and has therefore the stronger reason for regretting the decease of Mrs. Lovegrove, who to the end shared the strong interest which her first husband, Mr. W. Tayler, felt in the Society.

I may be excused for noticing also the name of Sir Francis Hincks, K.C.M.G., with whom I served in Canada in the years 1842-44, and who was one of my predecessors in the government of the Windward Islands.

I venture, before passing from this mournful record, to express a hope that we may find in a large accession of influential Fellows an increasing support, not only to maintain our too scanty income, but to sustain and advance the high reputation of the Society.

The signal success of our Jubilee meeting, held at the close of last session, which resulted in the creation of that much desired, and in fact much needed, institution, an International Statistical Institute, has dictated to me the main theme of my present address.

When you did me the honour to re-elect me to this chair, I proposed to bring before you on this occasion a sequel to my address of last year, in the form of a review of the progress and condition of the several British colonies in their relations with the mother country, but it seems more opportune to call your attention to what has been done, and to enlist your interest in what is proposed to be done, in the direction of the collection, comparison, and uniformity of international statistics.

The valuable Jubilee volume, the interest of which has been so much enhanced by the classified index appended to it, showing the authors of all papers read before the Society during the fifty years of its existence, will soon make you so fully acquainted with the proceedings of the Jubilee meeting, and with their general results, that I need not here enlarge upon them; but I may mention one or two particulars which do not appear on the face of the volume, and which are not without their interest.

I will not dwell upon the success of the meeting, both in its business and its social aspects, but I would take occasion to express the gratification of the Council at the large attendance of foreign visitors, counting with those who were not included in our list of invitations about forty, of whom as many as twenty-two were delegates of their Governments, or of municipalities, appointed to represent them at the meeting. Eleven countries and three municipalities were thus represented:—

France ..... by 3	Holland ..... by 1	Brazil ..... by 1
Austria ..... ,, 2	Belgium ..... ,, 1	City of Paris ..... ,, 3
Hungary ..... ,, 2	Italy ..... ,, 1	,, Budapest .. ,, 1
Russia ..... ,, 3	Roumania ..... ,, 1	,, Prague .... ,, 1
Norway ..... ,, 1	Greece ..... ,, 1	

while the American Statistical Association, the Statistical Societies of Paris and Manchester, and the Statistical and Social Inquiry Society of Ireland, were all represented by their presidents or by one or more of their officers.

I would also record the great satisfaction of the Council that such perfect harmony existed, with at the same time the freest expression of opinion on the part of all the members present; and I would add my own acknowledgments of the great indulgence and support which I received in the performance of my duties as President of the meeting. I cannot but view this experience as a

happy augury of the future concord which will attend the operations of the Institute.

The Jubilee volume contains some published testimony to the satisfaction which our foreign visitors expressed at the reception they experienced on the part of the Society, and with the conduct and issue of the business carried on at the meetings, but it scarcely represents adequately the cordiality with which in personal and private communications they have given the Council reason to believe that the efforts to entertain them, and to promote a friendly feeling among the statisticians present at the meeting, had been entirely successful.

I cannot pass from this subject without noticing the forthcoming volume in which all the proceedings of the Jubilee meeting will be recorded, and inviting your thanks to your Honorary and Foreign Secretary, Mr. John B. Martin, who has devoted an amount of time and labour to its preparation of which you can form but a feeble idea, and has in it contributed such an admirable addition to the records of the Society.

The most important issue of that meeting, and one on which the Society has received the congratulations of many of the most eminent statisticians of Europe and America, is without doubt the formation of the International Statistical Institute, which has reunited the broken links of intercommunication among statisticians severed since the year 1878, has supplied a constitution which is not open to the objections and disagreements which brought the International Statistical Congresses and their successor, the Permanent Commission, to an untimely end, and has, I am happy to say, conciliated the sympathy and co-operation of those who were predisposed to view it with distrust, and who at first hesitated to become associated with it.

The Institute is now fully organised. All the members and honorary members who were nominated at the first meeting have accepted their membership as far as their answers have been received. The associates nominated in the first hurried list have been elected, and a second list is in preparation for nomination at the next meeting. There is reason to expect that the first quarterly publication will not be delayed beyond the commencement of next year. The first Annuaire, which will be published in Italy, is in hand; and the first meeting of the Institute, to be henceforward held biennially, will take place, I trust, in the course of the ensuing year.

I will not detain you unnecessarily by expatiating upon the importance and value of international statistics. Those who have attended the International Congresses, or who have observed the

progress and results of those meetings, have ample proofs of the good work accomplished in the increased uniformity and comprehensiveness of official statistics, in the establishment in many countries of special commissions or departments for the collection and digest of the national statistics, and in the almost universal publication of annual or periodical year-books, or statistical volumes, by the Governments and the most important municipal bodies. Their indirect influence has not been less marked in the increased intercourse between the directors of statistical departments and other statisticians, and, I may add, in the formation of the International Statistical Institute, which may be said, without irreverence to its progenitors, to have risen, like a phœnix, from their ashes.

Neither will I discuss, unless incidentally, the various directions in which the Institute may hope to be able to work: these will be a subject for the consideration of the assembled members of that body next year.

I propose on this occasion to bring before you some illustrations of the importance of the results to be obtained from the grouping and comparison of national statistics; to show what an organised body, like the newly formed Institute, may effect, either by its own agencies or by its influence upon other bodies having greater resources at their command, and to afford an example of the manner in which each of the committees, or each of its members, may contribute to the objects of the association, and to the advancement of statistical knowledge.

I speak of "statistical" in its higher sense, as designating the science which treats of "the Structure of Human Society," and which, whatever may be the objection to applying to it the technical, and, as interpreted by many whose opinion I respect, the somewhat exclusive term of "science," I hold to be the highest and practically the most important branch of human secular knowledge.

I will take my first illustration from a document which shows what a Government may do, and what the Government of Italy has done, for the promotion of international statistics. When Signor Bodio, the enlightened and indefatigable chief of the statistical department in that country, was in London at the recent Jubilee meeting, he called my attention to the "Confronti Inter-"nazionali," or international comparisons of the population, or vital, statistics of the several countries of Europe, and of four of the (New England) United States of America, which were published in 1884, in a volume entitled, as translated, "The Movement of the "Civil State of the Population of Italy." Here, hidden between two sections of the Italian Statistics,* and written in a language not

* They have since been published separately.

"understanded of the people" of Europe generally, lay 300 pages of the "Confronti," a very mine of statistical wealth, but in a state of ore—a raw mineral—requiring crushing and extraction: such operations as may be expected, and I hope may be realised, from the action of the International Institute. This work I have attempted, partially and incompletely, with insufficient time and means at my command, to perform; but the results appear to be of sufficient interest to merit your attention, and of sufficient value to justify their publication in their present incomplete form.

I do not pretend to have exhausted the subject, or to have extracted all the matter contained in the Italian tables. The compass of my address, and the shape of the *Journal* in which the abstracts must appear, have placed both bounds and hindrances in the way of my digest. I shall also have to point out in what respects my abstracts fall short of strict accuracy, and are open to dispute. Nothing is more injurious to the credit and usefulness of statistics than the concealment of defects and incongruities, and the attempt to reduce data which are not really comparable to an impossible and counterfeit uniformity. I hope I may exonerate myself from this charge when I disclaim for my comparisons more than an approximate value.

The Italian statistics, or, as I may often call them, M. Bodio's tables, comprise, as far as he was able to obtain them from each European country, and from four of the Old England States of the North American Union, returns of population, marriages, births, and deaths, in their most important aspects, for each year from 1865 to 1883, a period of nineteen years. I will enumerate them for the benefit of those who may wish to consult these tables.

Of the POPULATION he shows the total number in each year, according either to actual enumeration at each census during the period, or by calculation. If the sexes had been distinguished at each census, I could have added a valuable column to my tables showing the extent to which the population of females is increasing, or otherwise. I shall show this further on as regards England and some other countries, and I have inserted a Table VII, showing the proportion of the sexes at the latest census in each country, obtaining my information from various reliable sources.

With regard to MARRIAGES, we are in the habit of speaking commonly of "births, deaths, and marriages," and it is only very recently that one or more of the Registrars-general have discontinued this order of arrangement in their annual reports. The "Times" and other newspapers in their column of announcements place marriages between births and deaths, as if that were an improvement in the order of succession. But M. Bodio and others of late years, following the natural biological sequence, treat first

of marriages, and this order, I conceive, should be followed in every statistical publication.

Of MARRIAGES M. Bodio shows for each year the number and the percentage proportion to the population, with the mean (or average) proportion for the whole period, the number according to each combination of the civil or "conjugal" state of the persons marrying, with the percentage annual proportions, and the mean for the whole period; the ages of males and of females marrying in each year, with the same percentages and means; and the marriages between blood relations in different degrees.

Of BIRTHS he shows in like manner the number, and the proportion to the population in each year, and for the whole period; the number and percentage proportion of males and females; and the number, sex, and proportion of illegitimate and still-born children to legitimate births, and of illegitimate still-born births.

Of DEATHS he shows the same particulars as in the case of legitimate births; the sex, civil (conjugal) state and proportion to the population of the persons dying; their ages in groups in certain years, and proportion to the population; the mortality, absolute and proportional, in the first five years of life; with actuarial tables founded upon the above, distinguishing legitimate and illegitimate, absolute and proportional; and lastly, the number and proportions of suicides and violent deaths, and the sex, ages, and civil (conjugal) state of suicides.

The peculiarity and merit of these tables are that M. Bodio has supplied the means of easy national comparisons by furnishing the aggregate averages and percentages required for the examination. The data cover as far as possible the same periods, are averaged on an uniform system, and have been procured from authentic sources. There is therefore a presumption that they are as accurate as possible. Incomplete they are, as M. Bodio would be the first to admit, but necessarily so from the imperfection of the records whence the figures are taken; and there are doubtless many who hold that in comparisons of this nature it is allowable only to compare data that are exactly alike, that comprise the same countries and for the same periods. This is not attainable in the present instance. Must we abandon all attempts at comparisons from less perfect data?

It will probably be a surprise to many to learn that England is the only European country of any importance, excepting Russia, in which no record is kept of still-born children. This defect, I am informed, has from time to time been brought to the notice of the Government; and as the reasons in favour of requiring the registration of such births appear to outweigh any possible inconvenience it may occasion, it is to be hoped that when the Legislature can find

leisure for minor social improvements this omission in our generally admirable system of registration may be remedied.

From the above described data I have prepared four tables, I to IV, showing separately the principal facts relating to marriages, births, deaths, and the growth of the population in each country, with two others, V and VI, bringing the above facts together. As it would occupy too much space in the *Journal*, and is beyond my present object, to supply the absolute figures on which my percentages are based, I will explain the construction of these tables, in order that no misapprehension may occur with regard to them, or to the comparative value to be attached to the several parts of them.

Construction of Tables I to IV.

I have divided the countries of Europe into four groups, mainly arranged, according to the recommendations of the International Statistical Congress which met at St. Petersburg, into the north-western, central, southern, and eastern sections. In two cases I have departed from this arrangement. For the purpose of keeping Russia separate, on account of its vast extent and wide biological differences from most of the other countries, I have detached from Eastern Europe 1° Finland, and grouped it with North-West Europe, with which in fact it has greater biological affinities, and 2° Russian Poland, which has a geographical affinity with Central Europe, though it has a greater biological affinity with Russia. I have kept the United States' returns distinct.

All the countries of Europe are represented except Turkey, which Dr. Farr once called the "unstatistical country," and its tributary States, Bulgaria, Eastern Roumelia, Bosnia, Herzegovina, and Novi-Bazar. Portugal supplies only very meagre and distant information, births and deaths in 1860-62: the Government of that country is little in advance of the Turk in this respect. I may mention however that the compiler of the "Statesman's "Year Book" has procured more recent information, but still several years in arrear, and not available for supplying the deficiencies in the Italian tables. The returns from Spain for the years 1871-79 are altogether wanting, owing to the destruction of the records during one of the recent civil wars, and they are otherwise very deficient. With these exceptions the tables comprise all the countries of Europe.

In Table I will be found the population of each country, of each group, and of the whole of Europe, with and without European Russia, in the first and last years of the record, together with comparative statements of the increment in each country during the whole period, and annually, first according to the

enumerated or calculated number, and secondly according to the (so called) natural increase, by the calculated excess of births over deaths; and further with a comparison of the increment according to the two methods. The difference shows the extent of migration, the excess either of immigration or emigration.

Upon this table I have three remarks to make; first that the calculation for Russia is only brought up to the year 1879, when the population is stated to have been $73\frac{1}{2}$ millions, whereas it is now estimated at 77 millions; secondly, that as the number of the population given for Roumania is only a rough calculation, based upon a census taken ten years previously (in 1859-60), and has not been varied during the years 1870-83, it is unreliable for the purposes of comparison, and therefore that country has been omitted from most of the following calculations; thirdly, the population of the German empire, as constituted in 1872, though stated in the table for information, is not included in the average of Central Europe, as that of its principal constituent parts are stated separately. The balance of the population of the smaller States in 1881 is stated in a note at p. 515.*

The Tables II to IV are constructed on the same plan as regards the grouping of the countries. The headings will speak for themselves. There are two points to which I must call attention.

The averages of Europe, exclusive of Russia, at the head of the first column in each table, are not based upon the totals of the populations and of the several elements under treatment, which is the scientific and strictly accurate method of forming these averages, but upon the average of the twenty-eight countries contained in the same column. As these countries are of unequal size as regards the number of their peoples, the influence of a vast country like Russia, in which the average varies greatly from the averages of most of the smaller countries, will necessarily affect the average of the whole, for which reason Europe exclusive of Russia has been shown separately, as well as inclusive of Russia. And so, in like manner, the disproportion between large populations like those of France and Germany on the one hand, and of small countries like Norway and Denmark on the other, may, and probably to some degree does, affect the strict averages given for the whole of Europe in the first two lines of my three tables. But M. Bodio has not supplied these calculations, and they are too heavy for me to have undertaken them.

* Thuringia in these tables consists of six States, having a common statistical office at Weimar. It comprises the Grand Duchy of Saxe-Weimar, the Duchy of Saxe-Altenburg, the Principalities of Schwarzburg-Rudolstadt, and Sonderhausen, those of the two Reuss, and the Duchy of Saxe-Meiningen.

Moreover, I find that on accurately calculating a single year, the last in the series, 1882 or 1883, the difference between the average so obtained and the average framed on the method adopted in the tables is so small, not exceeding in any one of the three cases 4·5 per cent., that the averages given in the tables for the whole period in the principal calculations, where the data for some of the countries are incomplete or altogether wanting, may be adopted as approximately correct.

Under no circumstances can they be strictly accurate; a variety of circumstances exist to prevent this: differences in the methods and accuracy of registration, and in the periods of observation, an insufficient length of the period of observation, extraordinary events affecting that period, errors of observation, abstraction, and calculation, all combine to make any average only an approximation. But this is really all that is required, and the averages here given are sufficient for the statist's purposes, as the following table will show:—

Averages of Europe (*exclusive of Russia*) *in* 1882 *or* 1883.

	Calculated accurately by Totals of Classes compared with Totals of Population.	Calculated by Averaging Annual Averages of each Class.	Percentage Difference.
Marriages	7·67	7·60	− 0·9
Births	33·8	34·5	+ 2·4
Deaths.....	24·8	23·7	− 4·4

The variation shown in the differences of the three classes is consistent with their recognised comparative variability.

In connection with the above I may adduce the result of another still more striking comparison, showing both the operation of the theory of averages and the existence of an equalising force in nature tending to the adjustment of physical phenomena of this description.

If the means of marriages in the highest and lowest single year in each country during the period of observation in these tables, mostly seventeen or eighteen years, be taken and added up, the aggregate differs from the total annual average of the whole period for the same countries by only 1·1 per cent.

Dealing with the births in the same way, the difference is only 1·7 per cent., and the corresponding difference of deaths, in which greater annual variations might be expected, is only 8·1 per cent.

But if seven countries be excluded in which war, pestilence, and famine have greatly disturbed the normal average of deaths, viz., Finland, France, Prussia, Austria, Hungary, Croatia, and Servia (the wars of Russia, owing to its vast population, having

had but slight effect on its average death-rate), the above difference of 8·1 is reduced to 1·3.

So that in any of the three elements of marriages, births, and deaths, the mean of the normal annual extremes in the series of years under observation does not differ from the average of all the years by as much as 2 per cent.*

The most important averages in these tables are framed upon a population which in the last year (1882 or 1883) amounted to 307½ millions,† including Russia, or 234 millions excluding Russia.

* The tables in which I have made out this calculation are full of interest, but are too voluminous to be added to my already large appendix. I hope, however, that they may be published in the Bulletin of the International Statistical Institute; and I may here notice some of the most remarkable results, in addition to those just mentioned:—

1°. The difference in the variability of the three elements, as illustrated by the difference between the extremes, on the average of all Europe:—

Marriages	3·17	on an average of	8·1	per 1,000 =	40·0 per cent.
Births	6·7	,,	37·3	,, =	17·2 ,,
Deaths	11·9	,,	26·1	,, =	42·0 ,,

2°. The same illustrated by the percentage variation of the highest and lowest years respectively in each country, from the average of years, in all Europe:—

	Average.	Highest.		Lowest.	
Marriages	8·1	20 per cent.	above	18 per cent.	below.
Births	37·3	7·0	,,	11	,,
Deaths	26·1	32	,,	14	,,

3°. The effect of war, pestilence, and famine, as illustrated by a comparison similar to the first, of the difference between the extremes on the average of the N.W. section of Europe (Finland excepted) with Holland and Belgium, which countries have been in a great measure exempt from those scourges, and the rest of Europe:—

	Difference between the Extremes.			
	N.-W. Europe.		Rest of Europe.	
Marriages per 1,000	1·52 = 18·7	per cent.	3·87 = 47·8	per cent.
Births ,, ...	5·7 = 15·3	,,	9·2 = 24·6	,,
Deaths ,, ...	5·9 = 24·6	,,	14·5 = 55·5	,,

The former may to some extent be accepted as normal averages, at least as regards the relations of the three elements.

† This figure does not include the following populations taken from the "Statesman's Year Book" for 1885, to complete the aggregate of Europe; which amounts to 32½ millions (32,259,000).

1. Turkey	4,490,000	
Bulgaria	2,002,019	
Eastern Roumelia	850,000	
Bosnia, Herzegovina, and Novi-Bazar....	1,326,440	
		8,668,459
2. Montenegro		250,000?
3. Portugal		4,306,554
4. Smaller States of the German empire, not shown separately in the tables		2,937,000
		16,162,013
Roumania (estimated).....		5,376,000
Increase of Russia since 1879		3,270,000
Total		24,808,013

In eighteen out of the twenty-eight countries the observations extend over seventeen to nineteen years. Thus these observations embrace more than nine-tenths of all Europe, and are founded upon an aggregate population of about 5,500 millions (307 × 18) of people.

Moreover, if you take the number of countries, twenty-eight, and multiply it by any of the three factors, say average births, 35·4, or even average marriages, 8·0, the quotients being respectively 991 and 224, it will be seen that any deficiencies or errors in any of the twenty-eight countries, even if they do not balance one another, will not greatly affect or invalidate the aggregate averages, which only profess to be approximate. In fact any error will affect the result only by one twenty-eighth part of its own amount.

Hence all minor influences of war, pestilence, and famine in particular countries are absorbed, and have no perceptible influence upon the gross averages. The dire famine which doubled the mortality of Finland in 1866-68, and had a perceptible effect upon the population of Northern Russia and Sweden; the pestilence which doubled the mortality of Hungary in 1873, and the wars which added a third to the mortality of Austria in 1866, and of France in 1870-71, especially as they occurred at different periods, produce no measurable effect upon these large averages.

I must also remark, and request you to bear in mind, that in some of the secondary columns on the right hand side of each table the individual and aggregate averages are more or less incomplete, owing to the insufficiency or absence of the information furnished with relation to some of the countries. I have marked these columns with an asterisk. If I had more time and space at my command I would have pointed out the amount of the incompleteness, and enabled you to judge how far the aggregate and sectional averages are invalidated. It will be a suitable task for the International Statistical Institute to endeavour, in communication with the official statisticians of the several countries, to perfect tables of this nature, which may be accepted as standards for future comparison. The lessons to be learned even from the present incomplete comparisons may perhaps encourage endeavours to arrange for more perfect comparisons in future years.

Bearing these remarks in mind, I believe you may accept with confidence the principal and most interesting results of these several tables. I have placed the population table first, in order to give you an idea of the importance of the several countries, and of their aggregate population; but as their growth, which it is the purpose of this table to represent, is mainly the consequence of the correlation of the facts exhibited in the three following tables, I shall deal first with them.

Marriages, Europe. Table II.

As a preliminary remark, I must point out that in this table, as in the Italian tables, the proportion of marriages is shown by the number contracted, and not, as in the English Registrar-General's tables, by the number of persons married, which however is the more accurate, and the real marriage-rate, as the proportion of sexes living in the population is unequal.* It seemed to me that for the purposes of this inquiry the former was the more convenient method of exposition, while it was the form in which the information was given in the Italian tables. I would further remind my hearers that the proportion of marriages in different countries is doubtless affected greatly by the distribution of sex and ages in them severally.

1. Table II shows in the first column :—

1°. That the average number of marriages to the population of—

Europe, excluding Russia, is	8·0 to 1,000	persons living.
That in Russia it is	9·4	,,
And that in Europe, including Russia, it is	8·3	,,

In the four New England States, as I will call them for the sake of brevity, it averages 8·9; but it is the higher rate in the two immigrating States, Massachusetts and Rhode Island, which causes the difference. Vermont and Connecticut show the same rate as in all Europe, including Russia.

2°. That marriages are least numerous in North-Western Europe, most numerous in Russia, and less numerous in Southern than in Central Europe, viz. :—

North-Western Europe	7·0	per 1,000.
Southern Europe	8·0	,,
Central ,,	8·4	,,
Eastern (Russia)	9·4	,,

If I venture to ascribe causes for any of the phenomena appearing in these tables, I do so with all reserve; and any possible mistakes in these must not be allowed to detract from the value which may be recognised in the figures.

Climatic influences may have a considerable effect in keeping down the proportion of marriages in the first group. Social

* The English returns do not furnish the marriage-rate in each sex separately, nor the means of distinguishing it. The Swedish tables show that in Sweden in 1861-75 the rate among males was 13·83 and among females 13·04, and further that a century ago, 1751-70, the rate among men was much higher, viz., 18·67 to 16·80 among women. The proportion of the sexes in England and Sweden differs but slightly: 94·8 and 94·3 males respectively to 100 females.

influences have undoubtedly the effect of enhancing it in the last. M. Semenoff, in M. Bodio's Report (p. 158), and Mr. Wallace, in his work on Russia (vol. ii, p. 138), both show it to be owing to the custom of the peasantry of Russia, which forms nine-tenths of the population, to marry at the age of 18 to 20, a fact exhibited so conspicuously in other columns of this table. M. Semenoff states that the Russian peasant hastens to marry his son in order to have one labourer more in the household, and that in his early days the sons married at the age of 16 to 20, and never later. As Mr. Wallace describes it, "In Russia the natural labour-unit, if it "be allowed to use such a term, comprises a man, a woman, and a "horse. As soon therefore as a boy becomes an able-bodied labourer, "he ought to be provided with the two accessories necessary for "the completion of the labour unit." The father procures the horse, and the mother the wife. The dowry of the latter consists of a pair of good strong arms. Marriages of the Russian peasantry are generally arranged under the influence solely of economic considerations. The same, combined with other temporary influences, such as the return of peace after desolating wars, or the cessation of pestilences, apply to Servia, Croatia, parts of Austria, and other countries containing a Slavonic population. A change in the law of conscription, which has fixed the liability to serve in the annual levies at 21 years of age, has had considerable effect in inducing the young peasants to defer their marriage until they have become exempt from this liability.

3°. The countries which have the highest and lowest marriage-rate are as follows:—

	Average of Years.	Highest.
1. Servia	1879-83	12·4
2. Croatia	1874-80	10·6
3. Hungary	1865-82	10·3
4. Russia	1867-78	9·4
5. Saxony	1865-83	9·2
Average		10·4

	Average of Years.	Lowest.
5. Scotland	1865-83	7·2
5. Belgium	1865-83	7·2
4. Norway	„	6·9
3. Sweden	1865-82	6·5
2. Greece	„	6·1
1. Ireland	1865-83	4·8
Average		6·3

The proportion in Servia is somewhat startling, but it may be assumed that though it is probable enough that some marriages, more or less, may in every country escape registration, yet it is not likely that more marriages would be registered than the number which were actually contracted. M. Yakchitch, in his obliging communication to me,* attributes the high marriage and

* M. Yakchitch strongly urges the adoption of the national way of spelling the name of his country, viz., Serbia.

birth-rates to the circumstances pointed out at the close of the previous section.

I may here mention that when my three primary tables, II to IV, were prepared, I sent a copy to the head of the statistical department of each country named in them, with a note of the particular deductions to be drawn from them relating to his country, and a request that he would point out any correction or modification requiring to be made in such deductions. I have received several interesting and valuable replies to my communications, which I have not been able to use on this occasion; but I propose to add them as an appendix to this address when it is republished in the "Bulletin" of the International Statistical Institute, if the editor can find room for them; and in the meantime, as Russia occupies so prominent and special a position in my tables, and as the details relating to it are somewhat imperfect, and are based in some cases on an average of less than twelve years, I have annexed a table showing a complete series of observations founded upon an average of fourteen years, with which I have been favoured within the past week by M. Troinitsky, the Director of the Central Committee of Statistics in the Ministry of the Interior, and the chief delegate of the Russian Government to our Jubilee Meeting. In juxtaposition with his figures I have placed those in Tables II to IV for a somewhat different period, and the close approximation of the two series confirms the views already expressed as to the value of these tables for showing, at least approximately, the demographic elements of each country, and as to the certainty of the general averages not being affected by even material changes in the details of any particular country.

There is, however, one striking difference in the great increase of infant mortality, amounting to 28 per cent., but this is explained by M. Troinitsky to have been caused by an epidemic of diphtheria in several departments during the years added to the period.

The large amount of infant mortality here shown has suggested to me the preparation of the following table, showing a comparison of the proportion which such mortality bears to the whole number of deaths in countries having the highest and lowest birth-rates. This comparison however is subject to the remark that any differences in the proportion of children existing in the several countries beyond those indicated by their average birth-rates—a rather improbable contingency—would proportionally affect the results.

Countries with Highest Birth-Rates.	Births per 1,000.	Percentage Proportion of Deaths. Under 1 Year.	From Birth to 5 Years.	Countries with Lowest Birth-Rates.	Births per 1,000.	Percentage Proportion of Deaths. Under 1 Year.	From Birth to 5 Years.
Russia	49·4	34·2	53·9	Sweden	30·2	13·2	22·2
Croatia	45·3	23·4	42·4	Switzerland..	30·2	18·3	24·9
Servia	43·6	} Data	wanting	Greece	28·4	No	data
Hungary	43·0			Ireland	26·4	9·6	16·5
Würtemberg..	42·6	31·2	39·7	France	25·4	16·9	25·8
Average	44·8	29·6	45·3	Average	28·1	14·5	22·3

At both periods of early life the mortality was double in the countries having the highest birth-rate. Nevertheless the increase of the population was highest in those countries. In the first three the annual excess of births over deaths was at the rate of 1·15 per cent., and in the second four only 0·72, the average of Europe, inclusive of Russia, being 1·66.

4°. It will be observed that the proportion of marriages differs greatly in the three parts of the United Kingdom. I propose to defer the consideration of all the facts relating to our own country until the close of this examination.

5°. The highest marriage-rate, 12·4, in Servia, is 50 per cent. above the average; the lowest, 4·8, in Ireland, is 43 below the average; but as the registration is admitted to be imperfect in the latter country, it may be fairer to take Greece with 6·1, which is 29 below the average.

6°. It would be desirable, if it were practicable, to arrive at the proportion which marriages in each country bear to the marriageable portion of the population in each. This may be a fitting work for the International Statistical Institute. It is rather a complicated calculation. The marriageable age differs in different countries in the two sexes, it is affected by climatic and social considerations, and in several it is even controlled by legal enactments.

2. The next four columns show the increase or decrease in the marriage-rate in each country and group of countries, in the first and last five years of the period for which the figures are given. This comparison, which is extended to each of the other tables, is liable to the objection as regards individual countries that it may not show the normal rates of change, since the figures may be affected by extraordinary circumstances of war, pestilence, or famine, affecting the average in one or other of the countries, and that five years is an insufficient period on which to form an average.

But these special circumstances are neutralised in taking so large a number of countries; and when it is observed, as in this table of marriages, that the proportion of marriages has decreased in almost all the countries of Europe and New England, it may be confidently assumed that there is some general influence in operation which is causing this decrease.

1°. It will be seen that in twenty out of the twenty-six countries of Europe for which a comparison can be shown, and in all of the four New England States, there has been a decrease, varying from 3 to 30 (29·9) per cent., and in two other countries, Finland and Roumania, the comparison is invalidated by the famine which prevailed in the first quinquennium in the former, and by the unreliable character of the estimated population in the latter country, which has been already pointed out.

2°. With regard to the cause of this decrease it must be recognised that the last six years, 1878-83, have been a period of growing depression in most countries, and there is reason to believe that the increase of the town population in many of them has contributed to the decrease of the marriage-rate. In Ireland the registration is imperfect, and in France and Germany the reaction after the sudden increase of marriages following the Franco-German war will to some extent account for the decrease.

In illustration of the effect on the marriage-rate of returning peace after a war, the average increase of marriages in the five German States in which a comparison can be made during the two years after the Franco-German war was 22 (21·8) per cent., compared with the two previous years, and the average of the last two years in the same States has relapsed by 24·5 per cent. below the two years of abnormal increase.

3°. The countries which exhibit the greatest decrease and some increase, excluding Finland and Roumania, are:—

	Average of Years.	Decrease.
1. Würtemberg	1871-82	29·9
2. Bavaria	1865-83	27·3
3. Baden	„	23·7
4. Alsace-Lorraine	1872-82	23·3
5. Thuringia	1865-83	18·0
Average decrease		24·4

	Average of Years.	Increase.
4. Sweden	1865-82	3·3
3. Norway	1865-83	2·1
2. Italy	1872-83	5·0
1. Servia	1879-83	9·7
Average increase		5·0

The New England States show an average decrease of 14·9.

4°. The average decrease of all Europe, exclusive of Russia, has been 7·5, of Russia 12·1, and of the whole 8·3.

3. The next six columns exhibit the proportions of early and late marriages in both sexes. Here I have been hampered by the ages in the Italian tables being, like most others, grouped in periods of five or ten years, which cannot be divided. I have therefore been obliged to take, as the nearest approximation to the character designated, for early marriages males under 25 and females under 20, and for late marriages males of 40 and upwards. Opinion seemed to differ whether 30 or 35 should be considered a late marriage for females. I have therefore given both, and I will call attention to the close approximation between the proportions of females of 35 and upwards with those of males of 40 and upwards, which appears to indicate that these two ages correspond in the lives of the two sexes :—

1°. It will be seen in column 5 that on the average of Europe, exclusive of Russia, 30·7 per cent. of the males marry under 25, but that in Russia nearly 70 per cent. (68·5) marry at that age, and that, excluding Roumania, England ranks second in the list, at 51·3. The average of Europe, Russia included, is nearly 40 per cent. (39·3).

Roumania and Croatia, where the Slavonic element prevails, rank high, like Russia. Central Europe, with the exception of Croatia, ranks low. The New England States rank high, and average 42·3.

2°. Column 6 shows that the average of marriages below 20 among females in Europe, exclusive of Russia, is very small, only 13·7 per cent. In Russia it is less than the proportion of early marriages among males, being only 58 per cent., which brings the average of all Europe up to 24 per cent.

3°. In both males and females two-thirds of the countries are below the aggregate average, which is raised by high averages in a few instances.

4°. The countries ranking highest and lowest in this respect are :—

Early Marriages.

Males.

	Average of Years.	Highest.		Average of Years.	Lowest.
1. Russia	1867-78	68·5	5. Denmark	1865-82	20·9.
2. England.....	'72-82	51·3	4. Austria	'70-82	20·8
3. Croatia	'74-80	47·6	3. Bavaria.....	'70-83	18·9
4. Scotland.....	'70-81	42·3	2. Baden	'66-81	16·0
5. Spain	'65-70	38·4	1. Würtemberg.....	'71-82	14·4
Average		49·6	Average		18·2

Early Marriages—Contd.

Females.

	Average of Years.	Highest.
1. Russia	1867-78	58·0
2. Croatia	'74-80	46·8
3. Hungary	'76-82	36·0
4. France	'71-82	21·2
5. Austria	'70-83	18·1
Average		36·0

		Average of Years.	Lowest.
5.	Belgium	1872-82	6·4
	Bavaria	'70-83	
4.	Denmark	'65-82	6·2
3.	Sweden	'71-82	5·6
2.	Baden	'66-81	5·3
1.	Würtemberg	'71-82	4·2
Average			5·5

The disproportion between the sexes in the above figures is very great. In countries having a low average both males and females are low; it is otherwise in those having a high average.

4. The proportions of males in Europe, exclusive of Russia, marrying at 40 and upwards, and of females marrying at 35 and upwards, approximate closely, 10·8 and 11·4. There is necessarily a much smaller variation in both these columns than in that of early marriages.

The highest of males of 40 and above are only in—

Switzerland	15·1
Austria	14·3
Bavaria	14·3
Average	14·6

The lowest,	Scotland	9·3
„	England	8·9
„	Thuringia	7·8
		8·7

The highest of females of 40 and above are in—

Belgium	16·3
Switzerland	15·5
Holland	14·4
Average	15·4

The lowest are	Italy	8·7
„	Thuringia	7·9
„	Ireland	6·8
		7·8

5. The last two columns exhibit the proportion of re-marriages of widowers and widows. The average for Europe, exclusive of Russia, is 14·1 and 8·5 respectively, of Russia 18·6 and 13·0, and of all Europe 15·1 and 9·6.

It was to be expected that where the proportion of early marriages was great, that of re-marriages would also be great, and this holds good in Russia; but it does not hold good as regards males in Central Europe, where the re-marriages of both sexes largely exceed those of North-Western Europe, although the early marriages of males in the two groups are in an inverse ratio. This may be greatly owing to the mortality among males caused by the wars occurring in this group during the period under observation.

	Re-marriages.		Early Marriages.	
	Males.	Females.	Males.	Females.
Central Europe	15·2	9·3	26·8	14·9
North-Western Europe	12·5	7·0	33·4	11·0

Re-marriages of both sexes in New England States are frequent.

Births, Europe. Table III.

1. This table shows in the first column :—

1°. That the birth-rate of Europe, exclusive of Russia, is 35·4 to 1,000 persons living, of Russia 49·4, and of all Europe 38·7. The four European groups rank in the following order :—

Eastern Europe (Russia)	49·4
Central ,, ...	37·6
Southern ,, ...	34·0
North-western Europe	32·0

The New England States, notwithstanding their high marriage-rate, exhibit a startling inferiority in their birth-rate, which is only 23·4, less by 2·0 than that of France, the lowest European country.

2°. The countries exhibiting the highest and lowest birth rate, excluding Roumania, are as follows :—

	Average of Years.	Highest.		Average of Years.	Lowest.
1. Russia	1867-78	49·4	5. Sweden.....	1865-82	30·2
2. Croatia	1874-80	45·3	4. Switzerland	1870-83	30·2
3. Servia	1879-83	43·6	3. Greece	1865-82	28·4
4. Hungary	1865-83	43·0	2. Ireland.....	1865-83	26·4
5. Würtemberg	,,	42·6	1. France	1870-82	25·4
Average		44·8	Average		29·0

The high rates in Russia, Croatia, Servia, and Hungary correspond with their high marriage-rates, and Sweden, Switzerland, Greece, and Ireland with their low marriage-rates. Of the other two countries, Würtemberg has a marriage-rate slightly above the average of Europe, being 8·3, and France has a rate slightly below, being 7·8. Both are out of their place in this table in relation to their marriage-rates.

3°. With regard to the causes of the low birth-rates in France and the New England States, the explanation is to

be found in the works of their own writers. For France I will quote the recent work of the most competent writer, M. E. Cheysson, in his highly interesting pamphlet just published, on "La question de la Population en France et à "l'Étranger," in which the several comparisons are represented in a varied and most interesting series of graphic illustrations, which I commend to the notice of my hearers; and for New England I will refer to Dr. Nathan Allen's paper on the "Changes in New England Population," published in 1883.*

M. Cheysson having pointed out the low rate of natality (birth-rate), combined with a high rate of infant mortality, which he shows have reduced the annual growth of the population from 57 per 1,000 in 1821, to 26 in 1881, and which he designates "le "péril national," he cites among the many causes, the growth of large towns, debauchery, the crowding into manufacturing centres, the French law of inheritance, and the "moral restraint" of Malthus, practised, as he observes, "not by the poorer classes who "are very prolific, but by the well-to-do classes who are systemati- "cally sterile." This last remark, however, is scarcely correctly applied to the agricultural population. "In Normandy," says M. Baudrillant, "the population is resolved not to have any "children, or to restrict their number, because persons wish to "assure to a single child, or to the smallest number of children, "a comfortable existence. What preoccupies the Norman peasant "is the thought that after his death his holding will be cut up "or alienated. In Picardy it is the same; the cause is moral and "voluntary. Among the rich and well-to-do classes it is a fixed "determination not to have more than one or two children."

This object, I may remark, is much advanced by the practice of mothers resident in Paris not to suckle their infants, but to send them out of the city to be nursed by women in the surrounding country. Hence a feature in French statistics of infant mortality, viz., a low rate in Paris and a high rate in the surrounding departments.

M. Cheysson points out that the laws of indirect taxes and of octroi contribute to lower the birth-rate. The former are imposed upon the departments in proportion to their population; "hence "Brittany expiates its fruitfulness by an increased impost." The evidence as to the effects of the abolition of the law of primogeniture and of the compulsory subdivision of properties on the birth-rate is very striking, and deserves attention at the present time in

* Reprinted from "The Popular Science Monthly," August, 1883.

this country, where the views which have led to these lamentable results in France are being publicly advocated.

In a cartogram he shows that in Brittany, where properties are less divided, the population is prolific; in Normandy, where they are much divided, the natality is in an inverse ratio, and he quotes the eminent authority of the late Dr. Bertillon to the prevalence of this rule. In support of the same view he cites Dr. James Bertillon, Dr. Vacher, M. Baudrillant, and M. Paul Leroy-Beaulieu. The language of the latter is so significant and weighty that I will quote it at length :—

"On a voulu empêcher le bourgeois comme le paysan de faire "ce que l'on appelait jadis un aîné, c'est-à-dire d'avantager un de "ses enfants. On n'y a réussi qu'en partie. On peut toujours faire "un âiné, en supprimant les cadets." (Dr. Vacher had said, "Comme la loi ne permet plus de faire de cadets, on tourne la loi "en supprimant les cadets.") "C'est à ce beau résultat que "s'ingénient une foule de familles françaises. Si des lois ont pour "effet de pousser la plus grande partie de la population à n'avoir "qu'un enfant par famille, il faut avouer que ces lois, pour sacro-"saintes qu'on les tienne, non seulement outragent la morale, mais "encore conspirent contre la grandeur nationale."

I must be briefer in quoting Dr. Allen with regard to the New England States. He says that "two facts are pretty well estab-"lished: 1°. That the birth-rate of the foreign class" (immigrants) "is more than twice as large as the strictly American; "and 2°. That in the country districts of New England, settled "mainly by the Americans, it is questionable whether the birth-"rate exceeds the death-rate, that is, there is no addition to the "population by natural increase." He quotes the Board of Health for New Hampshire, who after carefully analysing the births and deaths in 1880, to draw the line between the foreign and the American, made out that the deaths among the Americans exceeded the births by 800. That is, New Hampshire lost population from this source. The proportion of that number to the population is not stated. Elsewhere he remarks that whereas forty or fifty years ago in New England large families numbering from six to twelve were quite common, and small families of one to three were rare, now the former are quite rare, even in the country towns, and in the great majority of the American families only one, two, or three children are found, and in very many families not one. On this he remarks: "And such a state of society is approved by the "fashions and prevailing sentiment of the day!" The causes to which he ascribes the change beyond that just referred to, are the exchange of country life for the city, a change in the physical organisation of the New England population by the introduction

of immigrants, to whom it has relegated, in the case of men, all kinds of agricultural and manufacturing pursuits requiring hard work, and in fact nearly all manual labour out of doors; and in the case of women, all household and domestic duties. The consequences, as he states them, are that "a course of physical "degeneracy to some extent has been going on with New "England men," and "the ill health of New England women is "proverbial."

The progress of the latter during the last half century "has "been parallel with the high pressure in education and the "neglect of house work. The nerves and the brain have been "cultivated at the expense of the muscles and physical stamina." "The law of maternity is already violated to such an extent that it "is questionable whether half our New England women can "properly nurse their offspring . . . . There are also decided "evidences that the maternal instinct, love of offspring, one "of the strongest and holiest instincts of our nature, is fading "away."

I have dwelt at some length upon this subject, because in an international point of view, either of information or warning, it is one of the most important phenomena exhibited in these tables.

> 4°. It will be seen that there was generally a decrease of births in the last quinquennium, corresponding for the most part with the decrease in marriages.

This correspondence, though existing to a certain extent, is by no means universal. Out of the five countries having the highest marriage-rate, only one has the highest birth-rate; out of the five having the lowest marriage-rate, only three have the lowest birth-rate. There appears to be a probability of a country with a high birth-rate having also the highest marriage-rate, but countries having low birth-rates have not always a low marriage-rate. France with the lowest birth-rate has about an average marriage-rate; and the New England States which have a very low birth-rate have a very high marriage-rate. The following two tables show these facts, and also the differences between the extremes of marriage and birth-rates. The first table also tends to show that a low marriage-rate is to some extent compensated for by a proportionately higher birth-rate.

A.—*Proportion of Births in European Countries having the Highest and Lowest Marriage-Rates.*

Countries.	Highest Marriages per 1,000.	Births per 1,000.	Countries.	Lowest Marriages per 1,000.	Births per 1,000.
Servia	12·4	43·6	Scotland	7·2	—
Croatia	10·6	45·3	Belgium		31·5
Hungary	10·3	43·0	Norway	6·9	30·8
Russia	9·4	49·4	Sweden	6·5	30·2
Thuringia	8·9	36·8	Greece	6·1	28·4
			Ireland	4·8	26·4
Average	10·3	43·6		6·3	29·5
Relation to frequency of marriage (No. of children to one marriage)		4·3	—		4·7

B.—*Proportion of Marriages in European Countries having the Highest and Lowest Birth-Rates.*

Countries.	Highest Births per 1,000.	Marriages per 1,000.	Countries.	Lowest Births per 1,000.	Marriages per 1,000.
Russia	49·4	9·4	Sweden	30·2	6·5
Croatia	45·3	10·6	Switzerland	30·2	7·4
Servia	43·6	12·4	Greece	28·4	6·1
Hungary	43·0	10·3	Ireland	26·4	4·8 ?
Würtemberg	42·6	8·3	France	25·4	7·8
Average	44·8	10·2		28·1	6·5
Relation of marriage to number of births (No. of children to one marriage)		4·5	—		4·4

The highest average birth-rate, 49·4, in Russia, is 22 per cent. above the average of 38·7; the lowest, 25·4, in France, is 34 per cent. below it. Moreover, as the births include illegitimate children, a comparison of marriages and births does not show the true number of children born to a marriage. The illegitimate births should be eliminated from the comparison. The Italian tables supply the absolute numbers, but not the calculations.

5°. The number of children born alive to a marriage does not correspond with the proportion of births to the population. The French authors use the term fecundity, but this strictly belongs to the proportion between births and females at a child-bearing age, which the Italian tables and the statistics of most countries do not exhibit. This is shown in a comparison of the four European groups:—

Order of Countries.	Birth-Rate.	Births to a Marriage.	
1. Eastern Europe (Russia)	49·4	5·3	1.
2. Central ,, ...	37·6	4·5	3.
3. Southern ,, ...	34·0	4·3	4.
4. North-Western Europe	32·0	4·6	2.

or excluding Ireland from the last group for reasons hereinafter to be shown, 4·4.

The average of all Europe including Russia is 4·7, of Europe excluding Russia 4·4, and of the New England States only 2·6. The highest rate excluding Ireland is 5·3, in Russia and Russian Poland; the lowest in Europe, 3·3, in France.

6°. The number of illegitimate births in 100 births averages in Europe, excluding Russia, 7·5, including Russia 6·4. Russia is here as conspicuously low as it was conspicuously high in the proportion of its early marriages, and the former difference is a consequence of the other.

The countries in which they are most and least numerous are shown in the following table, in connection with the other features bearing on the question of illegitimacy:—

Countries.	Number of Illegitimate Children in 100 Births.	Proportion of Marriages (Table II.)	Proportion of Early and Late Marriages.				Number of Children Born Alive to a Marriage.	Proportion of Males to Females. (Table VII.)
			Early.		Late.			
			Males under 25.	Females under 20.	Males 40 and above.	Females 30 and above.		
Average rate of all Europe	6·4	8·3	39·3	24·0	10·4	18·4	4·7	98·0
Highest rate—								
Bavaria	15·2	8·4	18·9	6·4	14·3	28·7	4·7	95·3
Austria	13·4	7·9	20·8	18·1	14·3	24·6	4·5	95·5
Saxony	13·2	9·2	34·7	10·7	9·4	18·4	4·6	94·6
Würtemberg	10·4	8·3	14·4	4·2	12·6	28·2	5·1	93·3
Thuringia	10·1	8·9	35·1	11·5	7·8	14·9	4·1	95·6
Average	12·4	8·5						
Lowest rate—								
Holland	3·4	8·0	26·6	?	13·1	27·6	4·5	96·7
Russia	2·9	9·4	68·5	58·0	7·4	8·8	5·3	97·7
Ireland	2·6	4·8 ?	32·6	13·5	10·5	14·8	5·5 ?	96·0
Greece	1·2	6·1	Data	wanting	—	—	4·7	100·3
Servia	0·6	12·4					3·5	103·6
Average	2·1	8·1						

This table seems to show two points of constant connection with the excess of illegitimacy, one of which appears remarkable,

namely, that an excess of illegitimacy exists where the proportion of males is lowest, and that, as might be expected, it coincides with a large proportion of late marriages of females. It can scarcely be doubted that compulsory military service and large standing armies tend to increase the proportion of illegitimate births.

7°. The proportion of still-born children to 100 births in those countries which furnish returns of them—it has already been noticed that the United Kingdom is an exception—is 3·3.

The highest and lowest countries in connection with birth-rate and proportion of illegitimate births are as follows:—

	Average of Years.	Number of Still-born Children in 100 Births.	Birth-Rate. (Table III.)	Number of Illegitimate Children in 100 Births.
Average of all Europe	—	—	—	—
Highest rate—				
1. Holland	1865–82	5·1	35·9	3·4
2. France	1870–82	4·5	25·4	7·4
3. Belgium	1865–83	4·4	31·5	7·1
4. Thuringia	„	4·2	36·8	10·1
5. Switzerland	1870–83	4·2	30·2	4·6
Average	—	4·5	32·0	6·5
Lowest rate—				
5. Italy	1865–83	2·8	36·8	6·8
4. Norway	„	2·5	30·8	8·5
3. Austria	„	2·4	38·4	13·4
2. Hungary	1876–82	1·5	43·0	7·5
1. Croatia	1874–82	1·1	45·3	5·2
Average	—	2·1	38·9	8·3

Note.—From this it would appear that the proportion of still-born births is lower in countries where the birth-rate and the proportion of illegitimate births are high, and this is stated to be the case in the several districts of Croatia.

8°. The proportion of still-born among illegitimate children is 48 per cent. higher than among the total of births of all kinds.*

9°. The extreme variation in countries among all still-born children is between 0·1 in Russia, and 5·1 in Holland; and among illegitimate births only between 3·0 in Hungary and Croatia, and 8·0 in Holland. This double observation

* An observation made in Norway in 1883 may be of interest here. Out of 1,831 still-born children in that year, being 2·7 per cent. of the total births, 200 or 10·9, were premature (twenty-eight weeks) births.

suggests the existence of some peculiar influence in the latter country.

10°. The proportion of males born to females, exclusive of still-born (Col. 11) is 105·6 to 100 in Europe exclusive of Russia, where it is only 105. In Southern Europe the proportion is higher; in Greece abnormally high, being 112. It is shown to be 110 in Connecticut. I have obtained from M. Bodio a return of the proportions of males born to females in each country, including still-born; but it is necessarily insufficient to form an average for Europe, as there are no returns from the United Kingdom. The average of the other countries is 106·6; and as the omission of the United Kingdom from the average of births excluding still-born would not alter the average of 105·6, and as decimals are omitted from that column, it may be safely assumed that the inclusion of the still-born would not increase the average beyond the extent of one additional male.

11°. The proportion of males among illegitimate births averages less, viz., 104. But in some countries it is higher, viz.:—

Scotland	106
Norway	107
Servia	111

In Greece and Rhode Island it is exceptionally low, viz., 96 and 91 respectively.

It has been suggested that a closer approximation of age in the parents in cases of illegitimacy may be the cause of the excess of female children born.

12°. The proportion of males produced among still-born children averages 131 to 100 females. In France it reaches 145, and in Massachusetts 148. The lowest is 125, in Thuringia.

It has been suggested that this large excess is owing to the greater difficulty in bringing male children alive into the world, in consequence of the usually larger size of their heads and bodies.

Deaths, Europe, Table IV.

Before entering into a comparison of the death-rate in different countries, I must point out that the results are subject to important qualifications of two distinct kinds: first, the distribution of the sexes, as shown in Table VII, and the difference of ages, of which an illustration is given in Tables X to XII; and secondly, the

degree of accuracy attained in the registration of the several countries. Making allowance for these possible causes of modification, the following are the principal deductions to be drawn from Table IV :—

1. 1°. According to the first column the average death-rate of—

Europe, excluding Russia, is	25·8
Of Russia alone.....	35·7
„ all Europe, including Russia.....	28·1

2°. The highest average is 38·7, in Croatia, and the lowest 17·2, in Norway. The average of New England is still lower, 16·5, and in Vermont alone it was only 14·3 in the few years under observation.

3°. There is a marked difference in the mortality of the several sections of Europe :—

Eastern Europe (Russia)	35·7
Central „	28·3
Southern „	25·6
North-Western Europe.....	20·5

The latter average, if Finland, ravaged by famine in 1868, were excluded, would be reduced to 19·4. But it must be borne in mind that during the period under observation North-western Europe has been exempt from desolating wars, in which most of the other parts of the continent have been engaged.

This will appear in the abstract of the countries which exhibit the highest and lowest rates :—

	Average of Years.	Highest.		Average of Years.	Lowest.
1. Croatia	1874-80	38·7	5. Greece	1865-82	20·8
2. Hungary	1865-82	38·2	4. Denmark	„	19·7
3. Russia	1867-78	35·7	3. Sweden.....	„	18·9
4. Würtemberg	1865-82	31·5	2. Ireland.....	1865-83	17·8
5. Austria	1865-83	31·0	1. Norway	„	17·2
Average		35·0			18·9

Cholera and disease have contributed to intensify the effects of war in Hungary and Croatia. If the registration of deaths is regular in Greece, it occupies an abnormal position among the countries of southern and eastern Europe. The correctness of my observation with regard to the effect of wars on the averages shown in this table is confirmed by the fact that the average of the last quinquennium in the five highest countries was only 32·7 per cent., while that of the five lowest remained stationary, at 18·9 per cent.

2. In the last quinquennium there has been a decrease in most

countries. The exceptions are Ireland and Hungary in Europe, and all the four New England States in America. The very large decrease in Finland and Croatia is exceptional, caused by famine, disease, and war in the first quinquennium.

Before drawing any exact comparisons from Col. 6, it would be necessary to examine the differences in the distribution of the sexes in Table VII; but where no great difference appears in that distribution, a marked difference in the death-rate of the two sexes represents an indisputable fact.

3. 1°. In columns 7—10 I have compared the death-rate with the birth-rate in the last quinquennium, as being less affected by political disturbances than the earlier part of the period, and I have shown the percentage excess, which averages—

1·43	per cent. for	Europe, excluding Russia.
1·54	„	Russia.
1·15	„	all Europe, including Russia.

2°. The different sections of Europe show a great diversity—

Eastern Europe (Russia)	1·54
North-Western Europe	1·31
Central Europe	0·99
Southern „	0·87

The three New England States for which returns are given rank lowest in the scale, their averages being from 0·49 to 0·66 per cent.

4. The next two columns show the mortality under the age of 1 and under the age of 5 years respectively. I have anticipated my chief remarks on these columns at p. 519. As the periods for which the information is or can be supplied—are very unequal, any detailed comparison might give erroneous results, but the general tenor of the figures may be accepted as indicating the countries where infant and juvenile mortality are light or heavy.

5. The next two columns exhibit the results of an attempt to show whether there has been a decrease in the last three years compared with the first three years under observation, and the figures are satisfactory, showing a decrease in almost every country. The exceptions are Denmark, Belgium, Saxony, Russia, and Rhode Island.

The object of the last two columns is to compare the mortality among legitimate and illegitimate infants. The aggregate average of those European countries for which the information is given shows a difference of nearly 50 per cent.

The British Isles. Tables II to IV.

I stated that I should reserve my examination of the facts relating to the British Isles until the close. These are not open to the objection that they refer to different (or materially different) periods. Those of England and Wales refer to the years 1865-82; those of Scotland and Ireland to 1865-83.

I cannot expect to bring out results which have escaped the notice of the distinguished officers who are at the head of the general register offices in the three divisions of the kingdom, but I am not aware that these results have been previously brought together in a collective review of a uniform lengthened period. The remarks of those officers are scattered over a series of separate annual reports, and it may be useful not so much to test them by a comparison with my tables, as to test the usefulness of my tables by a comparison with the results of their special knowledge and greater experience.

A. *Marriages, United Kingdom.*

1. As regards Marriages there is a marked and constant difference in the proportion contracted in the three divisions of the kingdom:—

	In first Quinquennium.	In last Quinquennium.	In whole Period.
England and Wales	8·4	7·5	8·1
Scotland	7·0	6·8	7·2
Ireland	5·3	4·2	4·8

With regard to England and Scotland this difference is decreasing. In the first quinquennium 1865-69 the difference was 16·6 per cent.; in the latter $\left\{\begin{matrix}1868\text{-}82\\1869\text{-}83\end{matrix}\right\}$ it is only 9·3. The difference in the whole period is 21 per cent. A few years ago the late Dr. Farr was under the impression that this difference arose from a defective registration of marriages, or a difference in the marriage law, in Scotland; but the Registrar-general for that country pointed out and satisfied him that this was not the case. In his report for 1875 the latter attributes the constant difference to the greater density of population,* 410·6 to a square mile in England and 114·5 in Scotland, implying the existence of great industrial centres in the former country, and to its greater wealth.

With regard to Ireland it is a regrettable fact, frequently

* Report for 1875, p. 21.

pointed out by the Registrar-general of that country, and especially mentioned in his report for 1881, that the registration of Roman Catholic marriages is very imperfect. Indeed a comparison of the number of births as well as of marriages in the three divisions would lead to the conclusion that the registration of the former is also incomplete. The proportion of deaths recorded in Ireland is also very low, but these are less likely to escape registration, and a paucity of deaths necessarily follows a paucity of births.

In order to show these differences, and perhaps to provoke an attempt to remedy the defective system in Ireland, I supply a Table, No. VIII, showing a comparison of the three countries for the years 1864-83, since the commencement of the registration in Ireland, and in a note I quote the registrar's explanation of the cause of the deficiency.*

2. The extreme variations in the three divisions during the eighteen years 1865-82 were as follows:—

	Years.	England, Marriage-Rate.	Years.	Scotland, Marriage-Rate.	Years.	Ireland, Marriage-Rate.
Highest.....	1873	8·78	1873	7·77	1865	5·51
Lowest	'79	7·18	'79	6·42	'80	3·92

The variations in the three, which, it will be observed, occurred in England and Scotland in the same years, were—

In England.....	1·60 per 1,000	Or brought to a common proportion to the marriage-rates of each	20 per cent.
„ Scotland.....	1·35 „		19 „
„ Ireland	1·59 „		33 „

3. The decrease of marriages in the two quinquenniums has been three times as great in England as in Scotland, viz. 10·1 to 3·3 per cent. The decrease has been very much greater in Ireland,

* "In dealing with the question of marriages, I regret to state that the "arrangements for the recording of marriages among the Roman Catholic portion "of the community are still of a cumbrous and unsatisfactory character. While "the Roman Catholic clergy give valuable aid in carrying out, and the registrars "do their best to administer, the Act in their localities, yet so much depends upon "the manner in which the 'husband' discharges his duty as conveyor of the certi-"ficate of marriage to the registrar—and, in fact, his action as informant of his "own marriage—that in spite of the desire of the clergy and the care of the "registrar, many marriages are imperfectly registered, and, I fear, a considerable "number even escape registration altogether, through the ignorance or carelessness "of the parties married. It is much to be regretted that public records of Roman "Catholic marriages in Ireland are liable to these defects, while the marriages of "members of all other denominations are carefully and accurately recorded. In "order to remedy these defects, a considerable revision of the existing statute (26 "and 27 Vict., cap. 90) would be necessary."—"Eighteenth Annual Report," p. 5. The proportion of Roman Catholics in Ireland at the last census was 76·5 per cent.; this defect applies therefore to three-fourths of the population.

viz., 20 per cent., which appears from the annual returns to be attributable more to the high rates prevailing in 1865-69 than to the failure of the crops and consequent distress in 1879-80.

4. Compared with other countries England is almost identical with the average of Europe excluding Russia, viz., 8·1 to 8·0. It is 20 per cent. below the five highest countries of Europe, and 29 per cent. above the five lowest. It is 10 per cent. below the average of the four New England States.

5. The decrease in England has been greater in the last quinquennium than the average of Europe, viz., 10·1 to 7·5; but that of Scotland, 3·3, has been less. As it is scarcely probable that the defectiveness of the registration in Ireland increases with years, it would appear that the decrease of marriages in that country has been double that of England, and much greater compared with Scotland and the average of Europe:—

Ireland	20·0	per cent.
England	10·1	„
Scotland	3·3	„
Europe (excluding Russia)	7·5	„

6. With regard to the age of marriage, it must be pointed out that in Ireland a statement of precise age is not obligatory, the entry of "minor" or "of full age" being sufficient for compliance with the law; and there is a general and increasing inclination to take advantage of this provision of the law. In 1865, a year after the introduction of the registration system, 13,910 out of 30,802 marriages furnished the age of both parties; in 1884 the ages were recorded in 5,857 instances, or only a fourth of the total number.

Subject to this insufficiency of the record in Ireland, the percentage proportion in the three countries of males contracting early marriages is very different, while that of females differs but slightly:—

Males.

In England	51·3	
„ Scotland	42·3, being 9·0 less than in England.	
„ Ireland	32·6 „ 18·7	„

Females.

In England	14·4	
„ Scotland	13·4, being 10·0 less than in England.	
„ Ireland	13·5 „ 0·9	„

The Registrar-general for Ireland has supplied me with the following striking comparison of the numbers who married under age, for males and for females, in England and Ireland, in the single year 1883:—

	Males.	Females.
England	7·42	21·79
Ireland	2·43	10·94

The Registrar-general for Scotland, in his report for 1858, ascribes the larger proportion of early marriages in England to the greater facility for procuring employment in that country, which causes an extensive emigration from the one to the other. The same influence applies in a greater measure to Ireland.

7. The proportion of males above 40 marrying in the three divisions increases, as might be expected, in an inverse ratio, but with much slighter differences, viz. :—

Marriages of Males at 40 *and above.*

England	8·9 in 100.
Scotland	9·3 „
Ireland	10·5 „

The same holds good of females in England and Scotland, but not in Ireland, where the proportion is considerably below both the other countries, being 2·0 in 100 below England, and 2·9 in 100 below Scotland, viz. :—

Marriages of Females at 30 *and above.*

England	16·8 in 100.
Scotland	17·7 „
Ireland	14·8 „

8. Compared with the average of other European countries, excepting Russia, all three countries exhibit a large excess of early marriages of males, viz. :—

England	20·6 in 100.
Scotland	11·6 „
Ireland	1·9 „

but they vary very slightly in the early marriages of females, viz. :—

England	14·4 in 100	Average of Europe, exclusive of Russia, 13·7 per cent.
Scotland	13·4 „	
Ireland	13·5 „	

and are considerably lower in the late marriages both of males and females, viz. :—

	Males.	Females.
England	8·9 in 100	16·8 in 100.
Scotland	9·3 „	17·7 „
Ireland	10·5 „	14·8 „
Europe	11·4 „	21·4 „

9. Compared with the New England States, Scotland exhibits the same proportion of early marriages. The States exhibit an excess of 8·1 in 100 in early female marriages over England.

10. The proportion of Re-marriages is less in Scotland, and still less in Ireland than in England, in both sexes, but the decrease is considerably greater in the female sex.

	Re-marriages.		Below England.			
	Widowers.	Widows.				
	In 100.	In 100.		In 100.		In 100.
England	13·7	9·7				
Scotland	12·0	6·0	Widowers	1·7	Widows	3·7
Ireland	11·2	5·7	,,	2·5	,, ...	4·0

11. Compared with the average of European countries England is slightly lower as regards re-marriages of widowers, but higher as regards those of widows. Scotland and Ireland are considerably below that average as regards both sexes.

	Re-marriages.	
	Widowers.	Widows.
Europe, excepting Russia	14·1	8·5
England	13·7	9·7
Scotland	12·0	6·0
Ireland	11·2	5·7

The differences in the proportions between the three divisions of the kingdom correspond with those which have been shown in the proportions of early marriages.

12. The New England States exhibit a considerable excess in both classes over all three divisions. Their average is for re-marriages of widowers 17·5, and of widows 11·1.

B. *Births, United Kingdom.*

1. The birth-rate does not follow the marriage-rate in the several divisions of the United Kingdom. Ireland perhaps is not comparable, owing to the imperfection pointed out in the marriage returns. But Scotland shows a birth-rate only 1 per cent. less than that of England, while its marriage-rate (in these tables) is 11 per cent. less. Hence the proportion of children born alive there to a marriage is 4·8 instead of 4·3. It is impossible to say what allowance should be made for the deficiencies in the marriage returns of Ireland, but a comparison of the marriage and birth-rates leaves no reason to suppose that the birth-rate falls short of that of England. The marriage-rate is 40 per cent. lower, while the birth-rate is only 24 per cent. lower. If the deficiency in the registration were taken at one-fourth, and the rate be raised from 4·8 to 6·0, the proportion of children born alive to a marriage

would be within a fraction the same as in Great Britain. This proportion, subject to the necessary correction, figures as 5·5.

2. The inequality in the birth-rate appears to be diminishing, as in the last quinquennium the decrease was considerably less in England, viz. :—

In England	2·5	in 100.
„ Scotland	4·2	„
„ Ireland	7·2	„

3. The extreme variations in the three divisions during the eighteen years 1865-82 were as follows :—

	Year.	England. Birth-rate.	Year.	Scotland. Birth-rate.	Year.	Ireland. Birth-rate.
Highest	1876	36·4	1874 '76	35·6	1871	28·1
Lowest	'83	33·3	'83	32·5	'83	23·6

Comparing these with the corresponding statement relating to the marriage-rate, it will be seen that in only one out of the seven above years, viz., 1874, in Scotland, did the year of highest and lowest rates follow those of the highest and lowest marriage-rates. The extreme variations of the three, which correspond very closely, like the marriages in England and Scotland, were :—

In England	3·1	per 1,000	or, brought to a common proportion to the birth-rate of each	8·8 per cent.
„ Scotland	3·1	„		8·9 „
„ Ireland	4·0	„		17·0 „

4. Compared with the average of Europe, England and Scotland are a trifle lower. Their decrease in the last quinquennium is somewhat greater. Compared with the New England States their birth-rate is just 50 per cent. higher.

5. The proportion of children born alive to a marriage in England is 0·1 per 100 less than in Europe without Russia. In Scotland it is 0·1 in 100 higher than in Europe including Russia, viz., 4·7. In England it is 68 per cent. above the New England States, and in Scotland 84 per cent.

6. There is a marked difference in the proportion of illegitimate births in the three divisions, viz. :—

England	5·3	in 100.
Scotland	9·2	„
Ireland	2·6	„

Scotland is 73 per cent. above England, and Ireland is 51 per cent. below it. England is 29 per cent. below the average of Europe including Russia (7·5), Scotland is 23 per cent. above it.

The proportion of illegitimate births in the New England States is only 1 per cent.

The subject of the difference in the proportions of illegitimate births in England and Scotland has been frequently discussed in the reports of the registrars-general of the latter country. It has been maintained by those officers that the character of the illegitimacy in Scotland differs from that prevailing on the continent of Europe. On the other hand it has been suggested whether there is a greater difference between the three divisions of the United Kingdom than between different portions of any of the three. But if the differences both in the parts and in the whole are constant, there must be circumstances causing those differences, which may be traceable to their origin, though this is not the occasion for making the attempt at any length. The difference in the marriage law of Scotland, which facilitates both the declaration and the repudiation of the bond of union, and the legitimisation of children born out of wedlock, may of itself be sufficient to account for the difference between England and Scotland. Another suggestion is that the further one goes north the greater is the proportion of illegitimacy; but although the proportions in Sweden, Denmark, and Norway are high, they are exceeded in many countries of central Europe, and the difference in the latitude of Scotland and Ireland would not account for the extreme difference between these two countries; whereas the existence of a notable influence, viz., that of the Roman catholic clergy in the latter island, may suggest a cause for the difference noticed in countries of Scandinavian origin and those in countries of central Europe.

It has been suggested by the Registrar-general for England that the ordinary method of measuring illegitimacy by comparing the proportion of illegitimate births with the total number of births is not correct, but that the number of illegitimate births should be compared with the number of unmarried women of child-bearing ages (15 to 45), and he has shown the results of this comparison in his report for the year 1879, p. 17, with some very interesting inferences.

He shows that on the average of ten years, 1867-78, the average annual illegitimate births per 1,000 of unmarried women of 15 to 45 years of age yielded the following results:—

1°. The average of all England was 15·8.

2°. The three lowest averages were in London and its suburbs, viz.:—

Surrey (extra-metropolitan)	8·9
Middlesex	8·9
London	10·0

3°. The three highest averages were in—

Shropshire	25·8
Yorkshire, North Riding	26·4
Cumberland	27·2

4°. That England and Wales can be divided into three zones: a southern zone, below a line drawn from the southern border of Suffolk to the Bristol Channel, with a rate of illegitimacy below the general average; a midland zone, starting from the same point, passing between North and South Wales, with a rate slightly above the average; and a northern zone with an excessively high rate.

5°. Warwickshire and Lancashire have exceptionally low rates, from which fact, coupled with the similar condition of the metropolis, it must be inferred that large towns and the existence of the "social evil" in them have an important influence on the statistics of illegitimacy.

The Registrar-general for Scotland furnishes a similar comparison for the year 1881,* which shows that the proportions are:—

For all Scotland	per 1,000	21·2
„ principal town districts		19·4
„ large „		21·0
„ small „		21·7
„ mainland rural districts		25·4
„ insular „		10·9

The English report for 1879 supplies a table showing a gradual and continuous diminution of such births in England and Wales since 1846:—

	Children born out of Wedlock in 100 Births.
1846–50	6·7
'51–55	6·6
'56–60	6·5
'61–65	6·4
'66–70	5·8
'71–75	5·2
'76–79	4·7

It would be interesting to compare this diminution with the decrease in the rural compared with the urban population in the same period.

But after all it may be asserted that "prevailing habits and "views, which see no disgrace in illegitimate births," as suggested by my correspondent in Austria, exercise the chief influence on this feature of social life. It may be hoped that no adverse influences

* Report for 1884, p. 13.

may change for the worse the present proportions of England and Ireland!

7. It has been previously pointed out that the law does not require still-born children to be registered in any part of the United Kingdom. As such information has an important bearing upon the frequency of births and upon the frequency of illegitimacy, it is very desirable that we should not be almost the only exceptional country in Europe as regards this formality.

8. The absence of this information prevents a comparison of the frequency of births as distinguished from the frequency of live births, and of the difference in the proportion of the sexes in the two classes, which is shown to differ in many other countries, the excess being usually on the side of births including the still-born.

9. There is a noticeable difference in the proportion of males to females born alive in the different divisions of the United Kingdom.*

In England it is 104 males to 100 females.
„ Scotland „ 105 „
„ Ireland „ 106 „

The average of Europe exclusive of Russia, and of the New England States, is 105·6. The above differences in the United Kingdom certainly correspond in an inverse ratio with the proportions of early marriages in each division, but the cause of them can scarcely be assigned wholly to early marriages of males, because the proportion of such marriages is as large in the New England States as in Scotland.

10. In connection with the above differences it is somewhat remarkable that the proportion of male to female illegitimate births in Scotland and Ireland differs from their proportions of all births, and the average of all Europe also differs in a still higher degree, being 104 instead of 105·6 males to 100 females.

C. *Deaths, United Kingdom.*

1. The death-rates of England and Scotland are identical, 21·4. There was a difference of only 1 per cent. in their birth-rates. The

* A suggestion having been made whether the difference between England and Scotland could, on the doctrine of probabilities, be considered other than accidental, I have examined the annual returns of the three divisions, and I find that the proportion in England has never varied from 104 in the eighteen years, but in Scotland and Ireland it has varied as follows:—

	Scotland.	Ireland.
104	1 year.	1 year.
105	10 years.	4 years.
106	6 „	13 „
107	2 „	1 year.

The differences appear worthy of notice in this place.

death-rate of Ireland was only 17·8, or nearly 17 (16·8), below that of Great Britain.

2. Comparing the death-rate with the birth-rate, the latter is in the proportion of 61 in 100 both in England and Scotland, and 67 in 100 in Ireland; and in the last five years, as shown in columns 7—9, this disproportion is increased, viz. :—

In England	59·0
„ Scotland	59·0
„ Ireland	77·0

3. The extreme variations in the three divisions during the eighteen years 1865-82 were as follows:—

	Years.	England. Death-Rate.	Years.	Scotland. Death-Rate.	Years.	Ireland. Death-Rate.
Highest	1866	23·4	1874 '75	23·2	1879	20·0
Lowest	'81	18·9	'81 '82	19·3	'68	15·8

The extreme variations in the three were:—

In England.....	4·5 per 1,000	Or brought to a common proportion to the death-rate	21 per cent.
„ Scotland.....	3·9 „		18 „
„ Ireland	4·2 „		23 „

4. There has been a decrease in the same proportion during the last quinquennium in England and Scotland, viz., 10 per cent. The table exhibits a striking and painful contrast for Ireland, but it presents an exaggerated view, it may be hoped, of the normal condition of that country. The first five years were all the most favourable of the whole series; the latter five included two of the famine years, 1879-80 and 1883, in which the mortality was also very high.

Moreover, the Registrar-general states that a large portion of the increase of registered deaths since 1878 is due to a more complete registration effected by aid of the Burial returns under the Public Health Act and the amended Registration Act.

5. Compared with the average of Europe, England and Scotland are 17 per cent. lower; Ireland is 31 per cent. lower. The decrease of the former two in the last quinquennium is slightly less than the average of Europe, indicating that an improvement in the continental countries is bringing them nearer to the favourable average of Great Britain. Compared with the average of the New England States, Great Britain exhibits an excess of 23 per cent. Those States are 7 per cent. below Ireland. This comparison is affected by the great difference in the birth-rate of the several countries.

6. The proportion of male to female deaths shows an extraordinary difference between the three divisions, and the differences in the distribution of the sexes (Table VII), or in that of ages (Table XII), furnish no sufficient explanation of it. In England it is 107 to 100; in both Scotland and Ireland the proportion is equal. In no other European country is the proportion so low, but in the New England States it is 1 per cent. lower, being only 99 in 100. This difference is constant. An examination of the extremes may help to indicate the cause of the difference.

	Year.	England. Proportion of Males.	Year.	Scotland. Proportion of Males.	Year.	Ireland. Proportion of Males.
Highest.....	1877	109	1873 '71 }	103	1874 '77 }	102
Lowest	'66	105	'75 }	97	1882	97

The limits of variation differ considerably in the three countries; they are:—

In England	4
„ Scotland	6
„ Ireland	5

7. The annual rate of natural increase, or excess of births over deaths, in the last five years is shown in column 10. This period has been taken as excluding most of the years in which sanguinary wars disturbed the normal death-rate of several countries. The rate of increase in England and Scotland is considerably more than double that of Ireland, while it is 36 per cent. higher than the average of Europe, viz.:—

England	1·41
Scotland	1·38
Ireland	0·57
Europe	1·03

8. The proportion of infant mortality, *i.e.*, of children under 1 year of age, appears to be much in favour of Ireland, and in a less degree to Scotland also, viz.:—

In England.....	14·9	
„ Scotland.....	12·2, being 2·7 per 100 less than in England.	
„ Ireland	9·6 „ 5·3	„

The same proportion holds in the case of children under 5 years of age in the case of Ireland, but not in that of Scotland, and the causes of the differences are worthy of inquiry:—

In England.....	24·9	
„ Scotland.....	23·1, being 1·8 per 100.	
„ Ireland	16·5 „ 8·4	„

9. Contrasted with the average of Europe (19·7) the comparison is much in favour of all three:—

	Under One Year. Per cent.	Under Five Years. Per cent.
In England the average is	24	15
„ Scotland „	37	28
„ Ireland „	51	44

10. Comparing the decrease in infant mortality between the first three years of the series, 1865-67, and the last three, 1881-83, the result shows very favourably for England, viz.:—

England ..... 9·4
Scotland ..... 5·6, being 3·8 in 100 less than in England.
Ireland ..... 1·2 „ 8·2 „

The average of Europe is framed on a diminished number of countries, and great differences manifest themselves in these; but compared with the average of such countries as are shown in the table, England exhibits a lower rate of decrease, which, as before noticed with regard to the general decrease of mortality in the last quinquennium, may arise from its having anticipated other countries in the march of improvement in this respect.

Before closing this comparison of the three sections of the United Kingdom, I will anticipate in respect of them some remarks I shall have to make on Table I, which in one sense exhibits the resultant of the other three tables, under the aspect of the GROWTH OF THE POPULATION: first, as derived from the enumerated population at the two extremes of the periods shown in the Italian tables, and secondly, as deduced from the excess of births over deaths during the same periods. The first may be taken as the actual growth, the latter as the natural growth; and the difference indicates the effects of emigration or immigration in the several countries.

The contrast in the three sections of the United Kingdom is very great. The actual increase has been:—

	Persons.
In England at the rate of 1·47 a year, yielding an increase of	5,269,000
In Scotland at the rate of 1·12 a year, yielding an increase of	641,000
In Ireland there has been a decrease at the rate of 0·58 a year, yielding a reduction of	580,000

On the other hand the natural increase in England has been at the rate of only 1·37 a year, or 0·10 below the actual rate. England has received the difference, amounting to 345,000 persons, from other parts of the United Kingdom, or from abroad.

Scotland shows a different result. Her natural increase has

been at the rate of 1·33 per cent., or 0·21 per cent. above the actual. She therefore has lost 120,000 persons by emigration to the sister kingdoms, or to other countries.

The result as regards Ireland is still more striking. Her natural increase has been at the rate of 0·86 per cent., and her increase ought to have been 866,000 persons, but her actual growth showed a decrease of 580,000 persons, at the rate of 0·58 a year. Her emigration therefore to Great Britain and to foreign countries has amounted to 1,446,000 persons, being at the rate of 1·44 a year. This must be borne in mind in examining all statements relating to her demographic condition.

Another series of tables which I have prepared brings to light important differences in the composition of the population of the three sections, which, though they may have attracted notice, have not, as far as I am aware, been hitherto brought into strict comparison.

Table X is a comparison of the distribution of the population of each part of the United Kingdom, as well as of France and the United States, by sex and age, at each census at which the ages have been recorded, divided into three groups—

From birth to 15,
„ 15 to 45,
„ 45 and above.

This division has been made with the view of separating the adults from the classes above and below them. The ages chosen presented the most convenient limits. I have been restricted by the practice of publishing the ages of the population in groups usually of 5 or 10 years. It is most desirable that every country should further publish the numbers in single years, as well for the convenience of their own statists, as for a variety of purposes in national comparisons. I hope that the International Statistical Institute may agree in this view, and bring about this improvement. For the purpose of the present comparison the ages chosen are as good as any other.

The choice of countries has been made with the object of comparing populations of a different character :—

1. England, with a rapid natural growth, increasing as it appears, slightly by immigration.
2. France, with scarcely any natural growth, also known to be increasing by immigration.
3. Ireland, with a slow natural growth, and a very large emigration.
4. United States, with a very slow natural growth, and a very large immigration.

Table XI, which is an abstract of the above, brings the five countries into close comparison at the last census of each.

Table XII exhibits a comparison of each country at the first and last census of each, giving the ages more in detail, and showing at what stages of life an increase or decrease has manifested itself in each.

This latter table, if extended to other countries, as I hope it may be by the International Statistical Institute, might be appropriately called a Population Gauge, as I have ventured to call a diagram which I shall presently explain to you, a national Biometer.

From Table X I have deduced the *average* proportions of the sex and ages at the five censuses, for the purpose of exhibiting what may be called the cardinal differences of the three sections of the kingdom :—

	0—15.	15—45.	45 and above.	Total.
Males—				
England	18·0	21·9	8·9	48·8
Scotland	18·3	21·2	8·3	47·9
Ireland	18·1	21·2	9·6	48·9
Females—				
England	17·9	23·4	9·8	51·2
Scotland	17·8	23·9	10·5	52·1
Ireland	17·4	23·1	10·5	51·1

From this it would appear that :—

England and Ireland have about the same proportion of the sexes, namely, 49 males to 51 females; but that Scotland has one male less, only 48 to 52 females.

As regards ages, Scotland has more male children under 15 than either England or Ireland, but a trifle less of female children than England.

As regards adults, England has 0·7 more of males than either Scotland or Ireland, but 0·5 less of females than Scotland.

Of males above 45 it has 0·6 more than Scotland, and 0·7 less than Ireland, while of females of that age it has 0·7 less than either.

The above and following percentages may appear small and insignificant, but when they are applied to populations counted by millions they assume an importance which cannot be over-rated, and which I hope may attract grave attention. In the case of England, at the present time every decimal, or if I may use the term, decime, represents 30,000 persons.

The above comparison is brought out more prominently in

Table XII, where some remarkable differences are shown, especially with regard to Ireland.

As compared with England—

Scotland showed in 1841 the same proportion of boys under 10, viz., 12·6 per cent. This had increased to 13·0 in 1881, while in England it had only advanced to 12·7. The difference was on the other side with girls in the two years; in 1841 the proportions were 12·6 in England, and 12·2 in Scotland; in 1881 they were 12·9 and 12·8 respectively. The change is still more striking in girls between 10 and 15. In England the proportions in 1841 were 5·3 in England, and 5·5 in Scotland; in 1881 they were 5·4 and 5·3 respectively.

Ireland showed in 1841 a small deficiency of boys under 5, but a large excess between 5 and 15, viz.:—

	England.	Ireland.
Boys under 5	6·6	6·4
„ 5—10	6·0	6·7
„ 10—15	5·5	6·3

In 1881 the difference at the earliest age is greatly increased; at the others it continues, but is less:—

	England.	Ireland.
Boys under 5	6·7	5·6
„ 5—10	6·0	6·1
„ 10—15	5·4	6·1

Similar changes are observable among girls at all three stages of life in 1841, but in 1881 the proportion of girls between 5 and 10 shows a falling off:—

	1841.		1881.	
	England.	Ireland.	England.	Ireland.
Girls under 5	6·6	6·2	6·8	5·5
„ 5—10	6·0	6·5	6·1	5·9
„ 10—15	5·3	6·1	5·4	5·8

At the other end of the scale the differences and changes during the forty years under observation are still more marked.

As compared with England—

Scotland showed both in 1841 and 1881 an excess over England in each of the stages of advanced life, viz.:—

	1841.		1881.	
	England.	Scotland.	England.	Scotland.
Males—				
From 45—55	3·9	3·5	4·0	3·7
,, 55—65	2·6	2·3	2·8	2·6
,, 65—75	1·4	1·3	1·5	1·4
,, 75 and above	0·63	0·64	0·56	0·61

Both have increased equally in the stage from 45 to 75 years; above that age Scotland has increased slightly more in males, and considerably more in females. The variations in the proportion of females were different in 1841, and the changes in 1881 have been unfavourable to Scotland, viz.:—

	1841.		1881.	
	England.	Scotland.	England.	Scotland.
Females—				
From 45—55	4·1	4·1	4·4	4·5
,, 55—65	2·7	2·9	3·1	3·3
,, 65—75	1·6	1·6	1·8	2·0
,, 75 and above	0·77	0·88	0·73	0·93

Thus it appears at the present time the two countries exhibit this contrast:—

England has 6 men in 1,000 above 45 years of age more than Scotland, and Scotland 5 more women above that age than England. At the extreme age of above 75 Scotland shows a considerable excess above England in both sexes.

A similar comparison between England and Ireland shows greatly to the disadvantage of the latter, and the large increase in the proportion of the aged population, especially of females, deserves the attention of all who are interested in the social condition of the latter country.

As regards males the contrast was in favour of Ireland in 1841; it was otherwise in 1881:—

	1841.		1881.	
	England.	Ireland.	England.	Ireland.
Males—				
From 45—55	3·9	3·6	4·0	4·1
,, 55—65	2·6	2·6	2·8	3·3
,, 65—75	1·4	1·1	1·5	2·0
,, 75 and above	0·63	0·56	0·56	1·07

	1841.		1881.	
	England.	Ireland.	England.	Ireland.
Females—				
From 45—55	4·1	3·9	4·4	4·5
,, 55—65	2·7	2·8	3·1	3·7
,, 65—75	1·6	1·1	1·8	2·1
,, 75 and above	0·77	0·62	0·73	1·08

From the above it appears that while in Ireland in 1841 the proportion of males above 45 was 0·67 below that in England, it had become in 1881 1·61 above that of England. In the forty years the increase in England was 4 per cent.; in Ireland it was 33 per cent. At the extreme age of 75 and upwards there was a decrease in England of 11 per cent.; in Ireland the increase was 91 per cent., or nearly double. With regard to females the difference is still greater. In 1841 the proportion above 45 was equally in favour of Ireland, being 0·75 less than in England, but in 1881 it had become 1·35 above that of England; and while the proportion above 75 had decreased in England 5 per cent., it had increased in Ireland 42 per cent., viz., from 0·62 to 1·08.

As regards the proportion of the sexes, it has been stated that at the present time England and Ireland rank together, about 49 men to 51 women in 100, Scotland having 52 women to 48 men. Since 1841 in England there has been a slight increase in the proportion of females, viz., from 51·1 to 51·3; the same in Ireland, from 50·8 to 51·0; while in Scotland there has been a slight decrease, from 51·9 to 51·8.

I will conclude this series of comparisons with a *résumé* of the changes in the three sections of the kingdom between 1841 and 1881, and with a graphic illustration* of the changes which have taken place in the annual marriage, birth, and death-rates in England, the figures being taken from the registrar-general's last report (for 1885, p. 31), with the addition of those for 1884, taken from his last quarterly report. I should have liked to have prepared similar diagrams for Scotland and Ireland, but I have not had time. Here is another useful work for the new Institute. Every kingdom may have its own biometer. This one for England shows in the most striking manner the effect of years of prosperity and depression on marriages, and usually, but not constantly, on births, the gradual increase of the birth-rate between 1838 and 1876, the narrow variability of the birth-rate, 33·3 to 36·4, as compared with either the marriage-rate, 14·4 to 17·9, or the death-

* P. 558*a*.

rate, 18·9 to 25·1, and the great variability, as might be expected, of the death-rate, with the gratifying decrease of it in the latter years of the period.

If I had time I might almost trace in it the history of our country. I may notice a few prominent features of the diagram:—

The oscillation of marriages between 1838 and 1844, while the birth-rate was steadily increasing.

The effects on marriages of the new tariff, the railway mania, and the repeal of the corn laws in 1845 and 1846, and the remarkable start in the birth-rate in 1846, with the consequent decrease in 1847.

The effects upon the death-rate of influenza in 1847, following upon a failure of the potato crop, and consequent scarcity and high prices, and of cholera in 1849.

The years 1846-47 exhibit, as the Registrar-general remarked at the time, and is brought under the eye at once in the diagram, "the result of great public prosperity and adversity, in great "contrast;" a rise of marriages with high birth and low death-rates in 1845; a continued high birth and very low death-rate in 1846, followed by a great fall in the marriage and birth-rates, and a great rise in the death-rate in 1847. The following year, 1848, showed a slight recovery in all three respects.

The effect of the declaration of peace in 1853 on marriages, causing an increase of births in 1854.

The effect of the war with Russia in 1854-56, in lowering the marriage-rate in those years.

The effect of the commercial panic, leading to the suspension of the Bank Charter Act, in 1857, upon the birth-rate of 1858.

The effect of the general commercial prosperity in 1872 and 1873 upon the increase of marriages and births, and the decrease of deaths.

And lastly, the continuous and rapid decrease in marriages and births caused by the growing decrease of commerce and general depression since 1873, interrupted by an increase of births in 1876, which may have had some connection with the fruitful season and good crops of 1874; the decrease in births following in the wake of that of marriages, and continuing down to 1883, although the marriage-rate reached its lowest point in 1879, and has been oscillating since that year, rising up to 1882, and falling down in the two following years up to the present time, the births showing a slight increase last year.

These changes come at once before the eye in this diagram, which it is always troublesome, and sometimes difficult, to trace in parallel columns of figures.

Résumé for the United Kingdom.

England shows—

As regards males, an increase of 0·1 under 15,
a decrease of 0·6 from 15 to 45,
an increase of 0·3 above 45.
As regards females „ of 0·2 under 15,
a decrease of 0·8 from 15 to 45,
an increase of 0·8 above 45.

Scotland shows—

As regards males, an increase of 0·2 under 15,
a decrease of 0·7 from 15 to 45,
an increase of 0·6 above 45.
As regards females „ of 0·3 under 15,
a large decrease of 1·6 from 15 to 45,
„ increase of 1·2 above 45.

Ireland shows the influences of famine and emigration in its varying numbers at different periods, which I have not time to bring out. As regards the comparison between 1841 and 1881 the table shows—

As regards males, a large decrease of 1·6 under 15,
„ of 1·3 from 15 to 45,
a large increase of 2·6 above 45.
As regards females „ decrease of 1·6 under 15,
a decrease of 1·1 from 15 to 45,
a large increase of 3·0 above 45.

Before turning to Table I, I will complete the examination of Tables X and XI in connection with my observations on those parts which relate to the United Kingdom. A comparison of England with France and the United States exhibits results highly favourable to the former. I regret that I have not the time, and perhaps might not be able to obtain the means, of extending it to any other countries. This will be a useful work for the new Institute.

France, like England, shows a greater steadiness in the distribution of sex and ages at the different censuses than Scotland or Ireland, but a comparison between the two countries in 1881 shows important differences:—

The proportion of males and females below 15 is—
In England, 18·2 among males, and 18·2 among females,
„ France, 13·5 „ 13·2 „
But above 45 it is—
In England, 8·8 among males, and 10·0 among females,
„ France, 14·0 „ 14·5 „

France has a larger proportion of adult males, but not of females:—

In England, from 15 to 45: Males, 21·7; females, 23·1 per cent.,
„ France „ „ 22·4; „ 22·3 „

These differences have increased disadvantageously for France between the years 1851 and 1882, males having decreased 0·87 and females 0·88.

The youthful male population under 15 has decreased from 13·9 to 13·5; the female from 13·4 to 13·2. The male population above 45 has increased from 12·6 to 14·0; the female from 13·6 to 14·5.

The growing proportion of this class as compared with the other four countries deserves the attention of French statists, and ought to be no unimportant factor in the political considerations of French statesmen; while the growing increase of the same class in Ireland and the United States presents a grave cause for solicitude to the Governments of those countries.

Percentage Proportion of the Population above 45.

	Males.		Females.	
	1841.	1881.	1841.	1881.
France (1851-82)	12·6	14·0	13·6	14·5
England	8·5	8·8	9·2	10·0
Scotland	7·7	8·4	9·5	10·7
Ireland	7·9	10·5	8·3	11·3
United States (1840-80)—				
50 years and above	4·2	6·4	4·1	5·9

The United States exhibit abnormal differences and changes, attributable to two causes which might perhaps be distinguished and shown separately, viz., the slow birth-rate and the very rapid immigration. I can only at present lay before you their combined effects. The latter, as was to be expected, has led to a proportion of the total number of males different from that of the other countries, viz. :—

	Males.	Females.
United States	51·0	49·0
England	49·0	51·0
Scotland	48·0	52·0
Ireland.....	49·0	51·0
Average of Europe..... ..	48·0	52·0

It is a remarkable feature that the United States, an immigrating country, shows a growth exactly corresponding to that of Ireland, an emigrating country, namely, a continuous decrease of the youthful population, together with a continuous increase of the aged population, resulting in a material difference at the end of the period, viz. :—

	Males.		Females.	
	1840-41.*	1880-81.	1840-41.	1880-81.
United States—				
Males under 15	22·4	18·9	21·3	18·3
„ 50 and above..... ..	4·2	6·4	4·1	5·9
Ireland—				
Males under 15	19·4	17·8	18·8	17·2
„ 45 and above.....	7·9	10·5	8·3	11·3

* The censuses of the United States were taken in 1840 and 1880, those of Ireland in 1841 and 1881.

There is this difference between the two countries: the States have gained an accession of 1·2 per cent. to their adult male population, and Ireland has lost it; the States have gained 1·4 per cent. of female adults; Ireland has lost 1·1 per cent.

The United States' return exhibits one feature which is perfectly unexpected: the proportion of males to females has slightly decreased, and that of females to males has increased proportionately one per 1,000 during the forty years. This makes the decrease in the proportion of children the more remarkable, and confirms the observations previously made on the paucity of the birth-rate in the States.*

Growth of Population. Table I.

1. I have left myself little time to exhibit the results of the other tables. With regard to No. 1, I have anticipated what I had to notice regarding the United Kingdom.

The other principal features are—

1°. Ireland is the only European country in this table in which there has been an actual decrease between 1865 and 1883, viz., 10·37 per cent. in eighteen years, or 0·58 a year. This decrease is partly owing to an excess of mortality in the latter part of the period, but mainly to emigration throughout the whole of it, which, as shown in Table IX, has averaged annually during that period 14 per 1,000 of the population, independent of the migration to Great Britain. With this exception there has been an annual increase varying from 0·16 to 2·12.

2. The following table shows the countries in which the largest and smallest growth occurred, and a comparison of the enumerated and actual increase will indicate to what extent the population appears to have increased or decreased by migration, though it is possible that some other explanation may be given of the

* P. 526.

difference, such as a change in the area, or in the completeness of the enumeration.

I have marked with an "Im." or "Em." the result of the comparison. Some other explanation than that of emigration must probably be looked for in the cases of Spain and Hungary.

Countries.	Highest Rate of Growth.			Countries.	Lowest Rate of Growth.		
	Periods.	Annual Rate of Increase.			Periods.	Annual Rate of Increase or Decrease.	
		Actual.	Natural.			Actual.	Natural.
1. Russian Poland	1865–79	2·12	1·51 Im.	5. Hungary	1865–82	+0·34	0·48 Em.?
2. Saxony	'65–83	1·73	1·34 „	4. Alsace-Lorraine	'72–82	+0·21	0·80 „
3. Greece	'65–82	1·62	0·76 „	3. France	'66–81	+0·20	0·16 Im.
4. England	„	1·47	1·37 „	2. Spain	'65–83	+0·16	0·48 Em.?
5. Russia	'67–78	1·44	1·37 „	1. Ireland	'65–83	−0·58	0·86 „
Average	—	1·67	1·27	Average	—	+0·07	0·55

2°. The countries which show an excess of actual growth over the natural, implying an increase by immigration, are shown by the sign — in the last column, and are:—

England	0·10 per cent.
France	0·04 „
Saxony	0·41 „
Russian Poland	0·61 „
Austria	0·03 „
Italy	0·10 „
Greece	0·86 „
Russia	0·07 „
And in the United States—	
Massachusetts	1·96 „
Connecticut	0·91 „
Rhode Island	2·40 „

3°. I will make only one other remark, but it is an important one. If the actual growth of Europe had come up to its natural growth, the north-western section would have had a greater population by 1,971,000, the central section by 3,118,000, the southern section by 245,000, while Russia would have had 493,000 less.

Proportion of the Sexes, Table VII.

There is one important feature in the growth of the peoples of Europe which deserves a closer examination than I can now give it, but I have supplied the means of studying it in Table VII,

which shows the proportion of the sexes in each country of Europe, and in all and some of the United States.

The principal results are :—

1°. The average of all Europe including Russia is 98 males to 100 females. As the average of Russia is 97·7, its exclusion would not affect the above average.

2°. There are considerable differences in the several groups, viz. :—

In Southern Europe	99·2
„ Eastern „ (Russia)	97·7
„ Central „	97·3
„ North-Western Europe	94·8

The difference between southern and north-western Europe being 4·4 in 100.

3°. In the whole of the United States there is an excess of the male population, viz., 103·6 to 100 females; but among the four New England States which have entered into previous comparisons, only one exhibits this excess; and in the two which have increased largely by immigration, viz., Massachusetts and Rhode Island, the proportion is scarcely 93 males to 100 females. This may be partly owing to a large proportion of the female immigrants remaining in the sea-board towns, and to the number of female servants in the same localities.

4°. The countries exhibiting the extremes are as follows: I have added the natural rate of increase in each, in order to show whether, and to what extent, an excess of either sex influenced the growth of the population.

	Highest Proportion of Males.	Natural Rate of Increase.		Lowest Proportion of Males.	Natural Rate of Increase.
1. Roumania*	105·6	....	7. Baden	95·1	+ 1·05
2. Servia	103·6	....	6. England	94·8	+ 1·37
3. Italy	100·5	+ 0·77	5. Saxony	94·6	+ 1·34
4. Greece	100·3	+ 0·76	4. Norway	94·3	+ 1·36
5. Belgium	99·9	+ 0·91	3. Sweden	94·3	+ 1·13
6. France	99·5	+ 0·16	2. Würtemberg	93·3	+ 1·11
7. Croatia	99·4	+ 0·66	1. Scotland	92·9	+ 1·33
Average of 5 highest	102·0	+ 0·65	Average of 5 lowest	93·9	+ 1·25

* I have included Roumania in this comparison because the objection to admitting it into previous comparisons does not hold good.

The difference between the two categories amounts to 8 per cent.

As regards the influence of unequal proportions of the sexes in the population, the above comparison shows that the rate of

increase is twice as great in those countries in which females preponderate.

I conclude this review by presenting to you a diagram showing the comparative proportions of marriages, births, and deaths in each country in Europe, and a comparison of the actual and natural growth of the population in each.* The former diagram gave a view of the changes in England from year to year. This diagram, framed on the same principle, gives a comparison of the countries of Europe for a period of years which in most cases is sufficiently long to supply a fair average. The first columns in Tables II to IV will show the length of the period in each case. As the diagram contains only a graphic summary of the details which I have laid before you, I have no observation to make upon it, except to call your attention to the concise and convenient form in which it brings together what have been called the demographic elements of the population of Europe.

It only remains for me to call your special attention to the two Tables XIII and XIV, which contain 1° the population, marriages, births, and deaths in Sweden between 1854 and 1883, in continuation of the valuable paper, which, as some of you may remember, was read before this Society by our Vice-President, Mr. F. Hendriks, in June, 1862; and 2° the marriage, birth, and death-rates of that country from the commencement of its unique series of records in 1748 up to the present time. Mr. Hendriks dealt with these figures up to the year 1855 from an actuary's point of view. I have dealt with them for the whole period of one hundred and thirty-five years from a statist's point of view. The six columns showing the annual differences in the several rates have been added in consequence of a suggestion made by the late Dr. Guy on another occasion, with a view to ascertaining the amount and limits of the annual fluctuations in each element, and to facilitating the study of the series, by indicating at once the prominent changes, and enabling the observer to trace the connection and sequence between the several elements. An analysis of these columns will serve to test the accuracy of M. Quetelet's statement, referred to by Dr. Guy, that the annual fluctuations in the number of marriages, in respect of which people consult and deliberate before they act, are less than in the case of the number of deaths, which occur independent of the human will.†

Before bringing my address to a close, I must apologise to you for the length of it. The subject grew in importance as I proceeded

* P. 559.

† The material of the Swedish tables has proved so abundant and valuable, that they would well have merited a separate discussion; and I have been obliged to place my remarks upon them in the Appendix, p. 580.

with its examination, and I judged that you would prefer that I should rather complete that examination, even though it carried me beyond the bounds of an ordinary address, than that I should omit useful information in order to reduce my remarks within the customary limits. I hope I have been able to adjust the difference by judicious omissions in the reading.

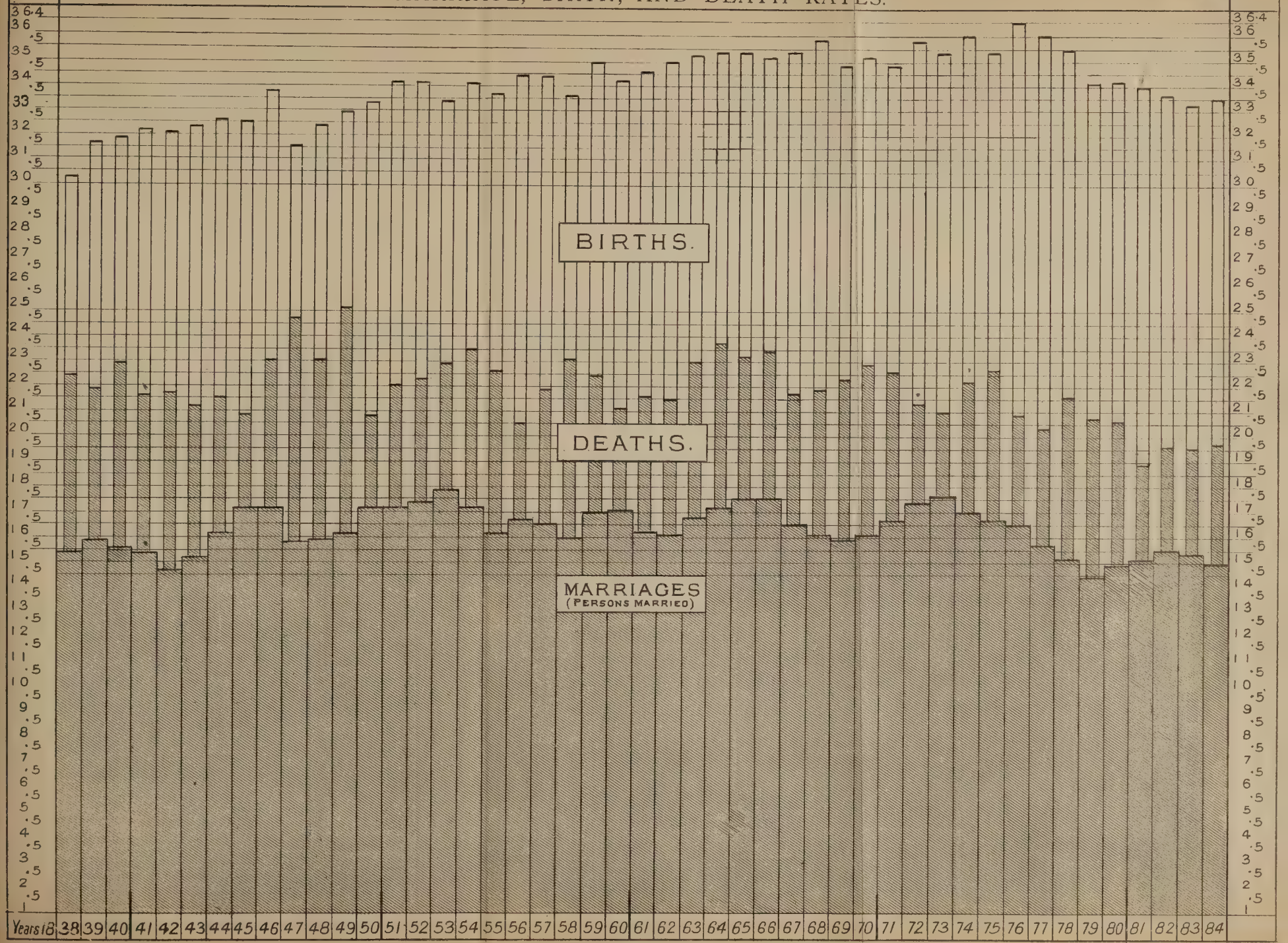
Last year I took occasion to bring before you a view of the position of England in relation to other countries holding colonial possessions. I started with no theory or prepossession, with no intention of instituting a comparison between the several countries. The comparison which resulted from an examination of the facts grew out of the inquiry. It was one of which, as an Englishman, I was proud, and which, I have reason to believe, has opened the eyes, and rejoiced the heart, of many a Briton and many a colonist.

This year with an equal absence of design, through the accident of M. Bodio having called my attention to his volume, and in consequence of the creation of the International Statistical Institute, I have been led to take up the subject of the population, or vital statistics—the demographic elements—of the several European countries; and the result of the comparison, I may venture to say, has been equally gratifying; as again Great Britain —our sister kingdom, Ireland, being in this, as in many other matters, an exception—has been shown to occupy a coign of advantage in most of those elements which constitute the strength and growth of a population.

Among these may be noted the smallness of its departure from a normal condition, considering the adverse influences of a very great advance in the corrupting ways of modern civilisation, its high marriage-rate, its large proportion of early marriages, its moderate birth-rate, its low rate of illegitimacy, its low and decreasing death-rate, indicated alike by the saving of infant life and by increasing longevity; and, lastly, to these may be added the advantage which England enjoys in the possession of the necessary means of expansion for its rapidly increasing population. And this fortuitously connects my present with my last year's address; for in the latter I was able to show that this England of ours enjoys in its colonies, beyond all other peoples, in healthy and favoured climes, an almost illimitable field for development, whence, in the course of time, the mother country may draw back fresh blood to invigorate the old stock, and to maintain the present prominent position which, in spite of all her faults and defects, and of all the evils which, happily, neither hidden nor unheeded, are being daily combated and gradually diminished, she now occupies among the nations of the world.

A BIOMETER FOR ENGLAND AND WALES, 1838-84.

MARRIAGE, BIRTH, AND DEATH RATES.



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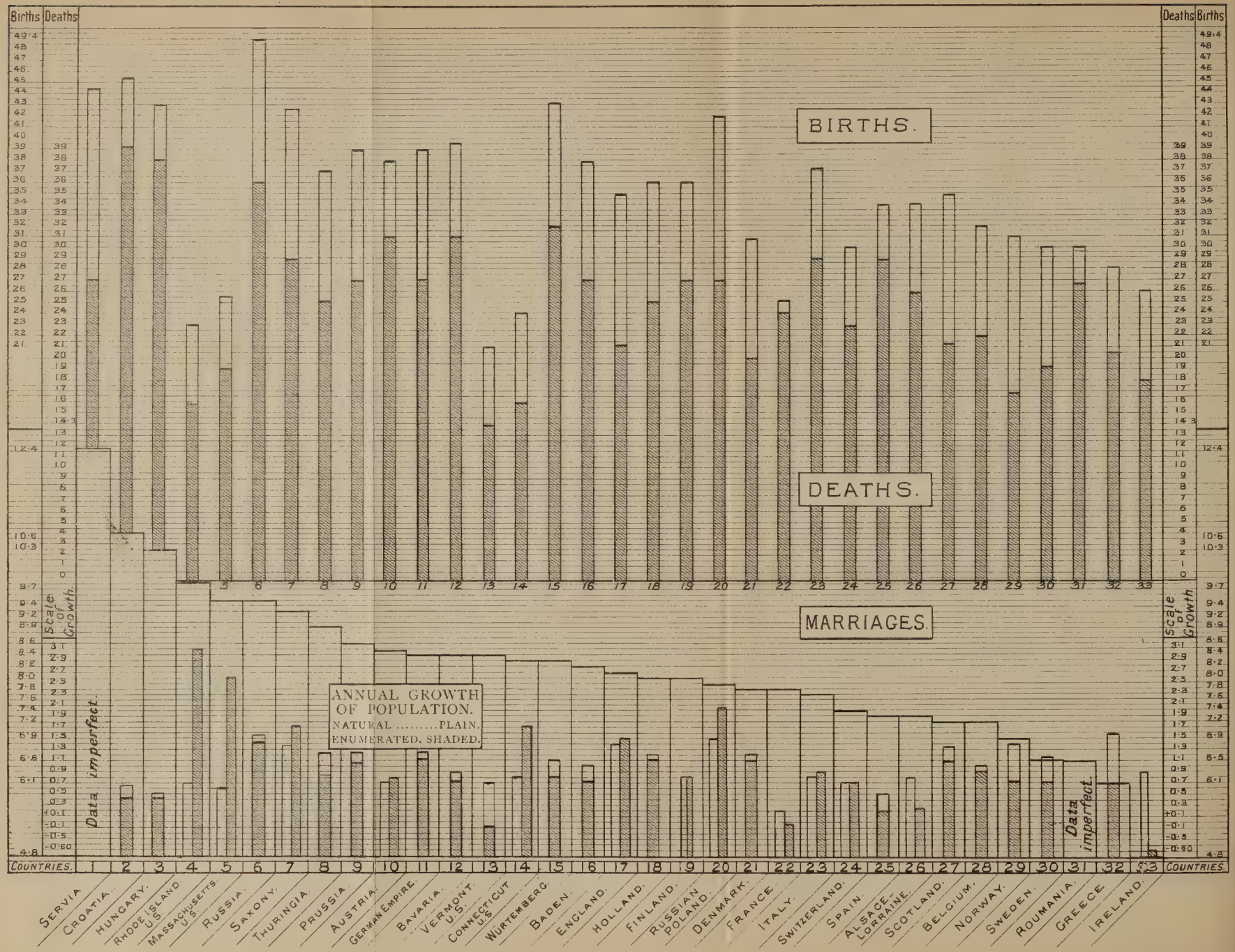
MARRIAGES, BIRTHS, DEATHS, AND GROWTH OF POPULATION, EUROPE. 1865-83.



Harrison & Sons, Lith., St. Martins Lane, W.C.

Diagram B.

Showing the Proportion of BIRTHS *and* DEATHS, *in connection with* MARRIAGES, *in each Country of Europe (Turkey and Portugal excepted) and in Four of the (New England) United States of America; also the Annual Rate of* INCREASE *of the Population in each, as calculated from the Natural Increase (Excess of Births over Deaths), and as Enumerated; on the Average (for the most part) of Nineteen Years from* 1865 *to* 1883. *Based upon the "Confronti Internazionali" of the Italian Government.*

EXPLANATIONS.

In each case of births, deaths, and marriages, the proportion is that of one to 1,000 persons living.

The proportions are drawn to scale, but the scale of marriages differs from that of births and deaths.

The number of marriages, and not the marriage-rate, or number of persons married, is shown.

The births and deaths are shown in the upper part of the figure in the light and shaded columns respectively.

The light part above the deaths shows the excess of births over deaths.

The marriages are shown in the lower part of the figure by the dark horizontal lines.

The natural and enumerated rates of increase are also shown in the lower part by the light and shaded columns respectively, *i.e.*, light, natural; shaded, enumerated. Where there is a single column the natural exceeds the enumerated growth; where there are two columns side by side the enumerated exceeds the natural.

Averages of Groups of Countries.

Marriages.

Eastern Europe (Russia)	9·4
Four New England States	8·9
Central Europe	8·4
All Europe	8·3
Europe, excluding Russia	8·0
Southern Europe	8·0
North-Western Europe	7·3

Births.		*Deaths.*	
Eastern Europe (Russia)	49·4	Eastern Europe (Russia)	36·0 (35·7)
All Europe, including Russia	39·0 (38·7)	Central ,,	28·0 (28·3)
Central Europe	38·0 (37·6)	All Europe, including Russia	28·0 (28·1)
Europe, excluding Russia	35·0 (35·4)	Europe, excluding Russia	26·0 (25·8)
Southern Europe	34·0	Southern Europe	26·0 (25·6)
North-Western Europe	32·0	North-Western Europe	21·0 (20·5)
Four New England States	23·3	Four New England States	17·0 (16·5)

APPENDIX A.

NOTES *upon* TABLE *on following page.*

* The German empire is not included in the calculations, as most of its constituent parts are given in detail. The balance is 2,937,000, and is included in the total of 332⅛ millions in next note.

Roumania also is excluded from the averages and totals, as the same figures, which are only estimated, are given for every year.

† Supplying omissions, and adding for increase in Russia up to 1883, these figures will stand in that year: Europe, excluding Russia, 259 millions; including Russia, 332½ millions. See note at p. 515.

‡ Russia brought up to 1883 shows an increase of 21 (20·99) per cent., and an annual increase of 1·31 instead of 1·44.

§ In Col. 10 the sign + means excess of natural } increase.
" − " enumerated }

TABLE I.—*Population of each Country of Europe (Turkey and Portugal excepted) and of certain of the United States of America, at the commencement and end of the series of Years for which Returns are furnished in the following Tables, with the Actual and Percentage Differences, the Annual Rate of Increase or Decrease, and the difference between the Natural Rate of Increase (by excess of Births over Deaths), and the Enumerated or Estimated Population.*

[000's omitted in Cols. 2, 4, 5, and 8.]

	COUNTRIES.	1 First Year, mostly 1865.	2	3 Last Year, mostly 1882 or 1883.	4†	5 DIFFERENCE.	6	7	8	9	10
		Year.	Number.	Year.	Number.	By Enumeration or Estimate.			By Natural Increase, (Excess of Births over Deaths.)		Natural Increase Col. 9, compared with Enumerated Increase Col. 7.
						Number.	Total per Cent.	Annual per Cent.	Number	Annual per Cent.	
	Total of Europe—										
	Russia excluded	...	208,327,	...	233,976,	25,649,	+12·31	0·72	28,035,	0·96	+ 0·24 §
	„ included	...	271,956,	...	307,727,	35,771,	13·15	0·88	27,628,	1·06	+ 0·16
1	England and Wales	1865	21,145,	1882	26,414,	+5,269,	+24·96	+ 1·47	4,924,	1·37	0·1C —
2	Scotland	„	3,185,	1883	3,826,	641,	20·12	1·12	761,	1·33	+ 0·21
3	Ireland	„	5,595,	„	5,015,	— 580,	−10·37	— 0·58	866,	0·86	+ 1·44
4	Norway	„	1,702,	„	1,916,	+ 214,	+12·57	+ 0·70	418,	1·36	+ 0·66
5	Sweden	„	4,114,	„	4,604,	490,	11·91	0·66	790,	1·13	+ 0·47
6	Denmark	„	1,604,	1882	2,008,	314,	18·54	1·09	333,	1·16	+ 0·07
7	Finland	„	1,843,	„	2,111,	268,	14·54	0·85	266,	0·85	Nil
	Total of N.-W. Europe	...	39,278,	...	45,894,	6,616,	16·84	0·98	8,358,	1·15	+ 0·17
8	Holland	1865	3,529,	1882	4,173,	644,	18·25	1·07	677,	1·13	+ 0·06
9	Belgium	„	4,984,	1883	5,721,	737,	14·78	0·82	817,	0·91	+ 0·09
10	France, exAlsace-Lorraine	1866	36,596,	1881	37,672,	1,078,	2·94	0·20	1,031,	0·16	0·04 —
11	German Empire (not included in totals)*	1872	41,185,	„	45,620,	4,435,	10·77	1·07	5,189,	1·24	+ 0·17
12	Alsace-Lorraine	„	1,545,	„	1,578,	33,	2·14	0·21	11,	0·80	+ 0·59
13	Prussia	1867	23,971,	1883	27,973,	4,002,	16·69	1·04	4,650,	1·23	+ 0·19
14	Saxony	1865	2,352,	„	3,083,	731,	31·08	1·73	567,	1·34	0·39 —
15	Thuringia	„	871,	„	1,005,	134,	15·38	0·85	186,	1·19	+ 0·34
16	Baden	„	1,430,	„	1,609,	179,	12·52	0·69	270,	1·05	+ 0·36
17	Würtemberg	„	1,758,	1882	1,992,	234,	13·31	0·78	330,	1·11	+ 0·33
18	Bavaria	„	4,813,	1883	5,442,	629,	13·07	0·72	770,	0·89	+ 0·17
19	Switzerland	„	2,581,	„	2,890,	309,	11·97	0·67	330,	0·71	+ 0·04
20	Poland, Russian	„	5,481,	1879	7,105,	1,624,	29·63	2·12	1,156,	1·51	0·61 -
21	Austria, proper	„	19,750,	1883	22,494,	2,744,	13·90	0·77	2,626,	0·74	0·03 -
22	Hungary and Transylvania	„	13,193,	1882	13,952,	759,	5·75	0·34	1,068,	0·48	+ 0·14
23	Croatia and Slavonia	1870	1,865,	...	1,938,	73,	4·45	0·37	147,	0·66	+ 0·29
	Total o Centra Europe	...	124,717,	...	138,627,	13,910,	11·15	0·68	14,636,	0·93	+ 0·25
24	Portugal	...	...	...	...	...	...	...	...	...	...
25	Spain	1865	16,379,	1883	16,859,	480,	2·93	0·16	1,408,	0·48	+ 0·32
26	Italy	„	25,065,	„	29,011,	3,946,	15·74	0·87	3,459,	0·77	0·10 —
27	Roumania*	1870	5,376,	„	5,376,	...	...	...	...	0·32	...
28	Servia	1865	1,186,	}	}		{16·02	...	...	1·69	...
	„ new territory	1879	325,	} „	{1,866,	680,	{9·71	...	...	...	...
29	Greece	1865	1,347,	1882	1,719,	372,	27·62	1·62	174,	0·76	0·86 —
	Total, South Europe, omitting Roumania and Servia	...	42,791,	...	47,589,	4,798,	11·22	0·62	5,041,	0·84	+ 0·22
30	Russia, European (Eastern Europe)	1867	63,659,	1878	73,747,	10,088,	15·84‡	1·44	9,593,	1·37	0·07 —
	U. States of America—										
	Massachusetts	1865	1,267,	1883	1,862,	595,	46·96	2·61	148,	0·65	1·96 —
	Vermont	„	330,	1870	332,	2,	0·61	0·12	...	0·67	+ 0·55
	Connecticut	„	499,	1882	641,	142,	28·45	1·67	64,	0·76	0·91 —
	Rhode Island	„	185,	1883	288,	103,	55·67	3·09	23,	0·69	2·40 —
	Total of above 4 States	...	2,281,	...	3,123,	842,	36·91	2·83	...	0·69	2·14 —

TABLE II.—*Annual Proportion of Marriages to the Population in Europe and in certain Re-marriages; with a comparison of the Annual Rate in the first and last*

	COUNTRIES.	Periods.	MARRIAGES. Per 1,000 Persons Living. Average of whole Period.	Average of First 5 Years.	Average of Last 5 Years.	Percentage Difference. Increase.	Percentage Difference. Decrease.
			1	2	3	4	5
	Average of Europe—						
	Russia excluded	—	8·0	8·0	7·4	—	7·5
	„ included	—	8·3	8·4	7·7	—	8·3
1	England and Wales	1865–82	8·1	8·4	7·5	—	10·1
2	Scotland	1865–83	7·2	7·0	6·8	—	3·3
3	Ireland	„	4·8	5·3	4·2	—	20·0
4	Norway	„	6·9	6·5	6·7	3·3	—
5	Sweden	1865–82	6·5	6·2	6·3	2·1	—
6	Denmark	„	7·8	7·9	7·6	—	4·3
7	Finland	„	8·0	7·0	7·4	5·8	—
	Average of North-Western Europe	—	7·0	6·9	6·6	—	4·3
8	Holland	1865–82	8·0	8·1	7·4	—	8·2
9	Belgium	1865–83	7·2	7·6	6·9	—	8·9
10	France	1870–82	7·8	7·9	7·5	—	4·5
11	German Empire (not included in averages)	1872–82	8·4	9·5	7·6	—	20·2
12	Alsace-Lorraine	„	7·3	8·3	6·4	—	23·3
13	Prussia	1867–83	8·6	8·7	7·7	—	11·5
14	Saxony	1865–83	9·2	9·2	8·7	—	4·9
15	Thuringia	„	8·9	9·7	7·9	—	18·0
16	Baden	„	8·2	8·4	6·4	—	23·7
17	Würtemberg	1871–82	8·3	9·3	6·5	—	29·9
18	Bavaria	1865–83	8·4	9·3	6·7	—	27·3
19	Switzerland	1867–83	7·4	7·0	6·8	—	2·9
20	Poland, Russian	1865–79	7·9	8·4	7·8	—	7·1
21	Austria (*a* under 24 years)	1865–83	8·5	8·7	7·9	—	9·2
22	Hungary	1865–82	10·3	10·3	9·8	—	4·8
23	Croatia and Slavonia (*a* id.)	1874–80	10·6	—	—	—	—
	Average of Central Europe	—	8·4	8·6	7·5	—	12·8
24	Portugal	1860–62	—	—	—	—	—
25	Spain	1865–70	7·3	—	—	—	—
26	Italy	1872–83	7·7	7·3	7·7	5·0	—
27	Roumania	1870–82	6·5	5·8	7·7	34·3	—
28	Servia	1879–83	12·4	11·3	12·4	9·6	—
29	Greece	1865–82	6·1	6·5	5·4	—	16·9
	Average of Southern Europe	—	8·0	7·7	8·3	7·8	—
30	Russia, European (Eastern Europe)	1867–78	9·4	9·9	8·7	—	12·1
	United States of America—						
	Massachusetts	1865–83	9·4	10·5	9·1	—	13·7
	Vermont	1865–76	8·4	9·3	8·2	—	12·0
	Connecticut	1865–82	8·3	9·2	7·6	—	17·9
	Rhode Island	1865–83	9·7	11·3	9·4	—	16·7
	Average of above four States	—	8·9	10·1	8·6	—	14·9

* Some of these averages are based upon a smaller

of the United States of America; also Proportions of Early and Late Marriages, and of Quinquennial Periods, in (for the most part) the Nineteen Years from 1865 *to* 1883.

MARRIAGES.								
Percentage of Marriages.*								
Early.		Late.				Re-marriages.		
Males under 25.	Females under 20.	Males 40 and above.	Females.			Widowers.	Widows.	
			30 to 35.	35 and above.	Total, 30 and above.			
6	7	8	9	10	11	12	13	
30·7	13·7	11·4	10 9	10·8	21·4	14·1	8·5	
39·3	24·0	10·4	9·2	9·5	18·4	15·1	9·6	
51·3	14·4	8·9	7·0	9·8	16·8	13·7	9·7	1
42·3	13·4	9·3	8·5	9·2	17·7	12·0	6·0	2
32·6	13·5	10·5	8·0	6·8	14·8	11·2	5·7	3
28·5	8·2	11·6	11·9	11·8	23·7	11·4	5·3	4
23·3	5·6	12·2	15·1	14·3	29·4	11·3	5·5	5
20·9	6·2	11·2	14·4	12·6	27·0	11·9	7·0	6
34·9	15·5	11·4	10·3	11·6	21·9	15·9	9·9	7
33·4	11·0	10·7	10·9	10·9	21·6	12·5	7·0	
26·6	—	13·1	13·2	14·4	27·6	15·2	9·2	8
22·6	6·4	13·3	13·9	16·3	30·2	11·6	8·5	9
27·0	21·2	10·3	9·0	10·2	19·2	11·6	7·8	10
—	—	—	—	—	—	—	—	11
—	8·0	10·6	—	—	23·5	13·5	7·3	12
—	10·3	9·6	—	—	20·0	14·0	8·8	13
34·7	10·7	9·4	8·8	9·6	18·4	13 6	7·9	14
35·1	11·5	7·8	7·8	7·1	14·9	10·9	5·8	15
16·0	5·3	11·7	12·9	12·0	24·9	13·6	5·8	16
14·4	4·2	12·6	14·4	13·8	28·2	16·1	7·8	17
18·9	6·4	14·3	—	—	28·7	14·6	7·7	18
26·5	8·8	15·1	12·0	15·5	27·5	14·0	7·7	19
—	—	—	—	—	—	—	—	20
20·8 *a*	18·1	14·3	—	—	24·6	18·0	11·3	21
31·7	36·0	10·0	—	—	13·7	20·0	15·0	22
47·6 *a*	46·8	12·9	—	—	16·8	26·8	19·0	23
26·8	14·9	11·8	11·5	12·3	22·7	15·2	9·3	
—	—	—	—	—	—	—	—	24
38·4	—	—	—	9·1	—	14·9	8·9	25
26·0	16·9	10·9	8·6	8·7	17·3	13·1	7·4	26
56·2	—	—	—	3·7	—	12·4	9·1	27
—	—	—	—	—	—	—	—	28
—	—	—	—	—	6·6	10·0	7·2	29
40·1	—	—	—	7·2	12·0	12·6	8·1	
68·5	58·0	7·4	3·6	5·2	8·8	18·6	13·0	30
40·0	18·9	9·7	7·2	8·5	15·7	16·2	10·7	
44·1	32·0	13·1	6·1	10·1	16 2	20·9	12·5	
—	16·4	10·4	—	—	18·6	15·4	10·2	
42·7	22·8	10·4	7·4	9·2	16·6	—	—	
42·3	22·5	10·9	6·9	9·3	16·8	17·5	11·1	

number of years than those in Columns 1 to 5.

TABLE III.—*Annual Birth-Rate in Europe, and in certain of the United States of America; Females in each Class; with a comparison of the Annual Rate in the first and last*

	COUNTRIES.	BIRTHS.* Per 1,000 Persons Living.					
		Periods.	Average of whole Period.	Average of		Percentage Difference.	
				First 5 Years.	Last 5 Years.	Increase.	Decrease.
			1	2	3	4	5
	Average of Europe—						
	Russia excluded	—	35·4	35·3	34·7	—	1·7
	„ included	—	38·7	38·5	38·3	—	0·5
1	England and Wales	1865–82	35·1	35·3	34·4	—	2·5
2	Scotland	1865–83	34·7	35·1	33·6	—	4·2
3	Ireland	„	26·4	26·4	24·5	—	7·2
4	Norway	„	30·8	30·4	31·0	2·0	—
5	Sweden	1865–82	30·2	30·4	29·6	—	2·6
6	Denmark	„	31·3	31·0	32·0	3·2	—
7	Finland	„	35·5	31·4	36·0	14·6	—
	Average of North-Western Europe	—	32·0	31·4	31·6	0·6	—
8	Holland	1865–82	35·9	37·1	35·5	—	4·3
9	Belgium	1865–83	31·5	31·9	31·3	—	2·0
10	France	1870–82	25·4	25·9	25·0	—	3·5
11	German Empire	1872–82	39·0	40·1	38·0	—	5·2
12	Alsace-Lorraine	„	34·0	35·2	32·5	—	7·6
13	Prussia	1867–83	38·8	38·0	37·3	—	1·8
14	Saxony	1865–83	42·4	40·5	41·9	3·4	—
15	Thuringia	„	36·8	35·5	36·0	1·4	—
16	Baden	„	37·8	37·7	34·9	—	7·4
17	Würtemberg	1865–82	42·6	43·1	40·0	—	7·2
18	Bavaria	1865–83	39·5	37·5	38·0	1·3	—
19	Switzerland	1870–83	30·2	29·7	28·7	—	3·3
20	Poland, Russian	1865–79	41·9	42·7	40·4	—	5·4
21	Austria	1865–83	38·4	37·9	38·4	1·3	—
22	Hungary	1865–82	43·0	40·6	43·1	6·1	—
23	Croatia and Slavonia	1874–80	45·3	43·0	43·9	2·1	—
	Average of Central Europe	—	37·6	37·1	36·5	—	1·6
24	Portugal	1860–62	31·9	—	—	—	—
25	Spain	1865–70 / 1880–83	33·9	36·7	30·0	—	18·2
26	Italy	1872–83	36·8	37·2	36·6	—	1·6
27	Roumania	1870–82	29·7	26·9	32·1	19·3	—
28	Servia	1879–83	43·6	45·7	45·4	—	0·6
29	Greece	1865–82	28·4	29·8	25·1	—	15·8
	Average of Southern Europe	—	34·0	35·3	33·8	—	4·2
30	Russia, European (Eastern Europe)	1867–76	49·4	49·2	50·2	2·0	—
	United States of America—						
	Massachusetts	1870–81	25·7	27·5	24·5	—	10·9
	Vermont	1872–76	21·0	—	—	—	—
	Connecticut	1865–81	23·6	22·8	22·7	—	0·4
	Rhode Island	1865–83	23·1	23·9	23·4	—	2·1
	Average of above four States	—	23·4	24·7	23·5	—	4·9

* The figures in this page include only children born alive.

also Proportions of Births to Marriages, of Illegitimate and Still-born Children, of Males to Quinquennial Periods, in (for the most part) the Nineteen Years from 1865 *to* 1883.

BIRTHS.								
Number Born Alive to One Marriage contracted in the same Year.	Illegitimate.	Still-born.		Number of Males to 100 Females.				
				Total of Births.		Illegitimate Births.	Still-born.	
	Number in 100 Births.	Number in 100 Births including Still-born.	Number in 100 Illegitimate Births, including Still-born.	Inclusive of Still-born.	Exclusive of Still-born.			
6	7†	8†	9†	10†	11†	12†	13†	
4·4	7·5	3·3	4·9	106·6	105·6	104	131	
4·7	6·4	—	—	—	105·5	104·5	130	
4·3	5·3	} Still-born	not recorded		104	104 }	Not recorded	1
4·8	9·2				105	106		2
5·5	2·6				106	105		3
4·4	8·5	3·5	5·3	106·3	106	107	129	4
4·6	10·2	3·1	4·2	106·0	105	105	134	5
4·0	10·7	3·6	4·2	105·7	105	105	130	6
4·4	7·7	2·9	4·6	106·4	105	103	130	7
4·6	7·7	3·0	4·6	106·1	105	105	126	
4·5	3·4	5·1	8·0	106·3	105	103	128	8
4·4	7·1	4·4	6·1	105·9	105	103	134	9
3·3	7·4	4·5	7·9	106·3	105	103	145	10
4·7	8·6	3·9	5·0	—	105	104	129	11
4·7	7·1	4·1	6·1	106·1	105	104	125	12
4·5	7·5	4·1	5·6	106·2	105	104	129	13
4·6	13·2	4·1	5·1	106·1	105	105	130	14
4·1	10·1	4·2	5·8	106·1	105	106	125	15
4·6	9·3	3·3	3·9	105·5	105	104	128	16
5·1	10·4	3·7	4·1	105·4	105	102	131	17
4·7	15·2	3·4	3·7	106·1	105	104	132	18
4·1	4·6	4·2	6·5	106·3	105	101	133	19
5·3	—	—	—	—	101	—	—	20
4·5	13·4	2·4	3·6	106·7	106	106	131	21
4·2	7·5	1·5	3·0	105·9	105	104	128	22
4·3	5·2	1·1	3·0	105·6	106	104	133	23
4·5	8·7	3·6	5·1	106·0	105	104	131	
—	—	—	—	—	—	—	—	24
4·6	5·6	—	—	106·9	107	104	—	25
4·8	6·8	2·8	3·8	107·1	106	104	137	26
4·6	4·3	1·6	3·3	110·8	111	103	134	27
3·5	0·6	—	—	—	106	111	—	28
4·7	1·2	—	—	111·0	112	96	—	29
4·3	3·7	—	3·6	109·0	108	104	135	
5·3	2·9	—	—	—	105	106	128	30
2·7	1·4	3·0	—	106·7	106	101	148	
2·5	0·9	2·8	—	105·3	105	—	—	
2·9	1·1	2·4	—	109·9	110	—	—	
2·4	0·8	3·7	—	106·2	105	91	140	
2·6	1·0	3·0	—	107·8	106	96	144	

† Some of these averages are based upon a smaller number of years than those in Columns 1 to 6.

TABLE IV.—*Annual Death-Rate in Europe and in certain of the United States of at early Ages, and of Legitimate and Illegitimate Children under One Year of Age; the most part) the Nineteen Years from* 1865 *to* 1883.

	COUNTRIES.	DEATHS. Number to 1,000 Persons Living. Periods.	Average of Whole Period.	Average of First 5 Years.	Average of Last 5 Years.	Percentage Difference. Increase.	Percentage Difference. Decrease.	Number of Males to 100 Females, excluding Still-born.
			1	2	3	4	5	6
	Average of Europe—							
	Russia excluded	—	25·8	27·2	24·4	—	10·3	106
	„ included	—	28·1	29·5	26·8	—	9·1	106
1	England and Wales	1865–82	21·4	22·5	20·3	—	9·8	107
2	Scotland	1865–83	21·4	22·0	19·8	—	10·0	100
3	Ireland	„	17·8	16·5	18·8	13·4	—	100
4	Norway	„	17·2	17·4	16·8	—	3·3	103
5	Sweden	1865–82	18·9	20·4	17·6	—	13·9	104
6	Denmark	„	19·7	20·5	19·2	—	6·2	103
7	Finland	„	27·0	40·1	22·8	—	43·3	103
	Average of North-Western Europe	—	20·5	19·9*	18·7*	—	6·0*	103
8	Holland	1865–82	24·6	25·2	22·1	—	12·1	105
9	Belgium	1865–83	22·4	24·2	21·2	—	12·2	108
10	France	1870–82	23·8	23·5	22·6	—	4·0	107
11	German Empire	1872–82	26·6	27·6	25·8	—	6·4	109
12	Alsace-Lorraine	„	26·0	26·5	25·3	—	3·9	102
13	Prussia	1867–83	26·5	27·9	25·0	—	10·6	109
14	Saxony	1865–83	29·0	28·8	28·6	—	0·7	109
15	Thuringia	„	24·9	24·8	24·0	—	3·1	109
16	Baden	„	27·3	27·9	24·8	—	11·0	106
17	Würtemberg	1865–82	31·5	32·9	28·3	—	14·0	106
18	Bavaria	1865–83	30·6	30·4	30·6	—	5·4	108
19	Switzerland	1870–83	23·1	24·1	21·8	—	9·5	108
20	Poland, Russian	1865–79	26·8	27·0	25·3	—	6·2	—
21	Austria	1865–83	31·0	31·6	30·2	—	4·2	108
22	Hungary	1865–82	32·8	32·9	37·1	12·7	—	108
23	Croatia and Slavonia	1874–80	38·7	47·9	32·9	—	31·3	107
	Average of Central Europe	—	28·3	29·0	26·6	—	8·3	107
24	Portugal	1860–62	21·0	—	—	—	—	—
25	Spain	1865–70, 1880–83	29·1	31·2	26·1	—	16·3	107
26	Italy ([a] in 1883 only)	1872–83	29·1	30·2	28·5	—	5·6	106
27	Roumania	1870–82	26·5	24·3	25·8	6·2	—	116
28	Servia	1879–83	26·7	27·5	26·8	—	2·6	112
29	Greece	1865–82	20·8	25·3	18·5	—	20·7	111
	Average of Southern Europe	—	25·6	27·7	25·1	—	9·3	110
30	Russia, European (Eastern Europe)	1867–78	35·7	37·0	34·8	—	6·0	105
	United States of America—							
	Massachusetts	1865–83	19·2	18·5	19·6	5·8	—	99
	Vermont	1865–76	14·3	13·2	15·7	18·8	—	98
	Connecticut	1865–82	16·0	15·1	16·1	7·0	—	102
	Rhode Island	1865–83	16·2	15·2	17·6	15·9	—	97
	Average of above four States	—	16·5	15·4	17·2	11·9	—	99

* Exclusive of Finland, where an extraordinary famine doubled the mortality in 1868.

America; also Proportions of Deaths compared with Births, of Excess of Births, of Deaths with a comparison of the Annual Rate in the first and last Quinquennial Periods, in (for

DEATHS.										
Deaths compared with Births, on Average of *last Five* Years.				Percentage Proportion of Deaths at Early Ages.		Percentage Difference in the Proportion of Deaths under One Year of Age between first Three and last Three Years of Period.		Percentage Proportion of Deaths under One Year of Age.		
Number to 1,000 Persons Living.		Proportion of Deaths to 100 Births.	Percentage Excess of Births over Deaths, or Natural Rate of Increase.	Under 1 Year.	From Birth to 5 Years.	Increase.	Decrease.	Among Legitimate Births.	Among Illegitimate Births.	
Births.	Deaths.									
7	8	9	10	11†	12†	13†	14†	15†	16†	
34·7	24·4	72	1·03	19·5	29·3	—	6·9	20·5	30·0	
38·3	26·8	71	1·15	21·1	32·3	—	5·9	—	—	
34·4	20·3	59	1·41	14·9	24·9	—	9·4	—	—	1
33·6	19·8	59	1·38	12·2	23·1	—	5·6	—	—	2
24·5	18·8	77	0·57	9·6	16·5	—	1·4	—	—	3
31·0	16·8	54	1·42	10·5	17·9	—	13·0	9·9	12·7	4
29·6	17·6	60	1·20	13·2	22·2	—	17·8	—	—	5
32·0	19·2	60	1·28	13·8	20·5	8·0	—	—	—	6
36·0	22·8	63	1·32	16·5	—	—	—	17·5	22·6	7
30·8*	18·7*	60*	1·31	12·9	20·9	—	7·0	—	—	
35·5	22·1	62	1·34	19·3	—	—	—	—	—	8
31·3	21·2	68	1·01	14·8	25·3	9·2	—	14·1	24·3	9
25·0	22·6	90	0·24	16·9	25·8	—	2·6	15·8	30·5	10
38·0	25·8	68	1·22	—	—	—	—	—	—	11
32·5	25 3	78	0·72	21·3	29·8	—	3·4	20·7	33·8	12
37·3	25·0	67	1·23	21·3	32·4	—	4·0	19·3	35·2	13
41·9	28·6	68	1·33	28·2	—	1·8	—	25·6	35·3	14
36·0	24·0	67	1·20	21·4	31·1	—	2·1	19·8	28·9	15
34·9	24·8	71	1·01	26·2	34·7	—	19·4	25·6	34·3	16
40·0	28·3	71	1·17	31·2	39·7	—	10·9	29·0	36·0	17
38·0	30·6	81	0·74	30·8	39·3	—	12·1	28·5	38·3	18
28·7	21·8	86	0·69	18·3	24·9	—	9·8	17·7	27·4	19
40·4	25·3	63	1·51	—	—	—	—	—	—	20
38·4	30·2	79	0·82	25·5	39·0	—	2·6	24·2	30·5	21
43·1	37·1	86	0 60	—	—	—	—	—	—	22
43·9	32·9	75	1·10	23·4	42·4	—	8·3	—	—	23
36·5	26·6	73	0·99	23·0	33·1	—	6·5	—	—	
—	—	—	—	—	—	—	—	—	—	24
30·0	26·1	87	0·39	—	—	—	—	—	—	25
36·6	28·5	78	0·81	21·0	37·8	—	9·7	19·0[a]	29·4[a]	26
32·1	25·8	80	0·63	—	—	—	—	—	—	27
45·4	26·8	59	1·86	—	—	—	—	—	—	28
25·1	18·5	74	0·66	—	—	—	—	—	—	29
33·8	25·1	76	0·87	—	—	—	—	—	—	
50·2	34·8	69	1·54	26·7	42·3	6·1	—	—	—	30
24·5	19·6	80	0·49	16·3	27·9	—	6 9	—	—	
—	—	—	—	13·1	22·6	—	—	—	—	
22·7	16·1	71	0·66	—	—	—	—	—	—	
23·4	17·6	75	0·58	13·5	25·4	2·8	—	—	—	
23·5	17·7	75	0·58	14·2	25·2	—	—	—	—	

† Some of these averages are based upon a smaller number of years than those in Columns 1 to 10.

TABLE V.—*Abstract of preceding Tables I to IV, showing the relations of frequency of Still-born Births, with frequency of Deaths, and Early Deaths, and with the Rate of of Europe, and in certain of the United States of America, on the Average (for the most*

	COUNTRIES.	MARRIAGES.						
		Number to 1,000 Inhabitants.	Percentage Proportion of					
			Early.		Medium.		Late.	
			Males under 25.	Females under 20.	Males between 25 and 40.	Females between 20 and 30.	Males 40 and above.	Females 30 and above.
		1	2*	3*	4*	5*	6*	7*
	Average of Europe—							
	Russia excluded	8·0	30·7	13·7	58·1	64·9	11·4	21·4
	„ included	8·3	39·3	24·0	50·3	57·2	10·4	18·4
1	England and Wales	8·1	51·3	14·4	39·8	68·8	8·9	16·8
2	Scotland	7·2	42·3	13·4	48·4	68·9	9·3	17·7
3	Ireland	4·8	32·6	13·5	56·9	71·7	10·5	14·8
4	Norway	6·9	28·5	8·2	59·9	68·1	11·6	23·7
5	Sweden	6·5	23·3	5·6	63·5	65·0	12·2	29·4
6	Denmark	7·8	20·9	6·2	67·9	66·8	11·2	27·0
7	Finland	8·0	34·9	15·5	52·7	62·7	11·4	21·9
	Average of N.-W. Europe	7·0	33·4	11·0	55·9	67·4	10·7	21·6
8	Holland	8·0	26·6	—	60·3	—	13·1	27·6
9	Belgium	7·2	22·6	6·4	64·1	63·4	13·3	30·2
10	France	7·8	27·0	21·2	62·7	59·6	10·3	19·2
11	German Empire	8·4	—	—	—	—	—	—
12	Alsace-Lorraine	7·3	—	8·0	—	—	10·6	23·5
13	Prussia	8·6	—	10·3	—	69·7	9·6	20·0
14	Saxony	9·2	34·7	10·7	55·9	70·9	9·4	18·4
15	Thuringia	8·9	35·1	11·5	57·6	73·6	7·8	14·9
16	Baden	8·2	16·0	5·3	72·3	69·8	11·7	24·9
17	Würtemberg	8·3	14·4	4·2	73·0	67·4	12·6	28·2
18	Bavaria	8·4	18·9	6·4	66·8	64·9	14·3	28·7
19	Switzerland	7·4	26·5	8·8	58·4	63·7	15·1	27·5
20	Poland, Russian	7·9	—	—	—	—	—	—
21	Austria	8·5	20·8	18·1	64·9	57·3	14·3	24·6
22	Hungary	10·3	31·7	36·0	58·3	50·3	10·0	13·7
23	Croatia and Slavonia	10·6	47·6	46·8	39·5	36·5	12·9	16·7
	Average of Central Europe	8·4	26·8	14·9	61·4	62·4	11·8	22·7
24	Portugal	—	—	—	—	—	—	—
25	Spain	7·3	38·4	—	—	—	—	—
26	Italy	7·7	26·0	16·9	63·1	65·8	10·9	17·3
27	Roumania	6·5	56·2	—	—	—	—	—
28	Servia	12·4	—	—	—	—	—	—
29	Greece	6·1	—	—	—	—	—	6·6
	Average of Southern Europe	8·0	40·1	—	—	—	—	—
30	Russia, European (Eastern Europe)	9·4	68·5	58·0	24·1	33·2	7·4	8·8
	United States of America—							
	Massachusetts	9·4	40·0	18·9	50·3	65·4	9·7	15·7
	Vermont	8·4	44·1	32·0	47·8	51·8	13·1	16·2
	Connecticut	8·3	—	16·4	—	—	10·4	18·6
	Rhode Island	9·7	42·7	22·8	46·9	60·6	10·4	16·6
	Average of above four States	8·9	42·3	22·5	44·8	60·7	10·9	16·8

* Some of these averages are based upon a smaller

Marriage, and Early and Late Marriages, with frequency of Births, with Illegitimate and Increase of the Population, together with their several intermediate relations, in each Country part) of the Nineteen Years from 1865 *to* 1883.

BIRTHS.				DEATHS.			Annual Rate of Increase, being the Average Annual Excess of Births over Deaths on whole of Periods.	
Number Born Alive to 1,000 Inhabitants.	Number to each Marriage.	Number of Illegitimate in 100 Births.	Number of Still-born in 100 Births, including Still-born.	Number to 1,000 Inhabitants.	Percentage Proportion. Under One Year.	Percentage Proportion. Total under Five Years.		
8	9	10*	11*	12	13*	14*	15	
35·4	4·4	7·5	3·3	25·8	19·5	29·3	+ 0·96	
38·7	4·7	6·4	—	28·1	21·1	32·3	+ 1·06	
35·1	4·3	5·3	Not recorded	21·4	14·9	24·9	+ 1·37	1
34·7	4·8	9·2		21·4	12·2	23·1	1·33	2
26·4	5·5	2·6		17·8	9·6	16·5	− 0·86	3
30·8	4·4	8·5	3·5	17·2	10·5	17·9	+ 1·36	4
30·2	4·6	10·2	3·1	18·9	13·2	22·2	1·13	5
31·3	4·0	10·7	3·6	19·7	13·8	20·5	1·6	6
35·5	4·4	7·7	2·9	27·0	16·5	—	0·85	7
32·0	4·6	7·7	3·0	20·5	12·9	20·9	1·15	
35·9	4·5	3·4	5·1	24·6	19·3	—	+ 1·13	8
31·5	4·4	7·1	4·4	22·4	14·8	25·3	0·91	9
25·4	3·3	7·4	4·5	23·8	16·9	25·8	− 0·16	10
39·0	4·7	8·6	3·9	26·6	—	—	+ 1·24	11
34·0	4·7	7·1	4·1	26·0	21·3	29·8	0·80	12
38·8	4·5	7·5	4·1	26·5	21·3	32·9	1·23	13
42·4	4·6	13·2	4·1	29·0	28·2	—	1·34	14
36·8	4·1	10·1	4·2	24·9	21·4	31·1	1·19	15
37·8	4·6	9·3	3·3	27·3	26·2	34·7	1·05	16
42·6	5·1	10·4	3·7	31·5	31·2	39·7	1·11	17
39·5	4·7	15·2	3·4	30·6	30·8	39·3	0·89	18
30·2	4·1	4·6	4·2	23·1	18·3	24·9	0·71	19
41·9	5·3	—	—	26·8	—	—	1·51	20
38·4	4·5	13·4	2·4	31·0	25·5	39·0	0·74	21
43·0	4·2	7·5	1·5	38·2	—	—	0·48	22
45·3	4·3	5·2	1·1	38·7	23·4	42·4	0·66	23
37·6	4·5	8·7	3·6	28·3	23·0	33·1	0·93	
31·9	—	—	—	21·0	—	—	—	24
33·9	4·6	5·6	—	29·1	—	—	0·48	25
36·8	4·8	6·8	2·8	29·1	21·0	37·8	0·77	26
29·7	4·6	4·3	1·6	26·5	—	—	—	27
43·6	3·5	0·6	—	26·7	—	—	—	28
28·4	4·7	1·2	—	20·8	—	—	0·76	29
34·0	4·3	3·7	—	25·6	—	—	0·84	
49·4	5·3	2·9	—	35·7	26·7	42·3	1·37	30
25·7	2·7	1·4	3·0	19·2	16·3	27·9	0·65	
21·0	2·5	0·9	2·8	14·3	13·1	22·6	0·67	
23·6	2·9	1·1	2·4	16·0	—	—	0·76	
23·1	2·4	0·8	3·7	16·2	13·5	25·4	0·69	
23·4	2·6	1·0	3·0	16·5	14·2	25·2	0·69	

number of years than those in the other columns.

TABLE VI.—*Summary of preceding Tables, showing the Proportion of Marriages, Births, and Deaths to the Population, distinguishing Deaths under One Year of Age, and the Rate of Natural Increase in Europe, and in certain of the United States of America, on the Average (for the most part) of the Nineteen Years from* 1865 *to* 1883.

	Countries.	Marriages.	Births.	Deaths.		Average Annual Excess of Births over Deaths, or Natural Increase of the Population.
		Proportion to 1,000 Living Persons.	Proportion Born Alive to 1,000 Living Persons.	Proportion to 1,000 Living Persons.	Under One Year. Proportion to whole Number.	
	Average of Europe—					
	Russia excluded	8·0	35·4	25·8	19·5	0·96
	„ included	8·3	38·7	28·1	21·1	1·06
1	England and Wales	8·1	35·1	21·4	14·9	1·37
2	Scotland	7·2	34·7	21·4	12·2	1·33
3	Ireland	4·8	26·4	17·8	9·6	0·86
4	Norway	6·9	30·8	17·2	10·5	1·36
5	Sweden	6·5	30·2	18·9	13·2	1·13
6	Denmark	7·8	31·3	19·7	13·8	1·16
7	Finland	8·0	35·5	27·0	16·5	0·85
	Average of North-W. Europe	7·0	32·0	20·5	12·9	0·98
8	Holland	8·0	35·9	24·6	19·3	1·13
9	Belgium	7·2	31·5	22·4	14·8	0·91
10	France	7·8	25·4	23·8	16·9	0·16
11	German Empire	8·4	39·0	26 6	—	1·24
12	Alsace-Lorraine	7·3	34·0	26·0	21·3	0·80
13	Prussia	8·6	38·8	26·5	21·3	1·23
14	Saxony	9·2	42·4	29·0	28·2	1·34
15	Thuringia	8·9	36·8	24·9	21·4	1·19
16	Baden	8·2	37·8	27·3	26·2	1·05
17	Würtemberg	8·3	42·6	31·5	31·2	1·11
18	Bavaria	8·4	39·5	30·6	30·8	0·89
19	Switzerland	7·4	30·2	23·1	18·3	0·71
20	Poland, Russian	7·9	41·9	26·8	—	1·51
21	Austria	8·5	38·4	31·0	25·5	0·74
22	Hungary	10·3	43·0	38·2	—	0·48
23	Croatia and Slavonia	10·6	45·3	38·7	23·4	0·66
	Average of Central Europe	8·4	37·6	28·3	23·0	0·93
24	Portugal	—	31·9	21·0	—	—
25	Spain	7·3	33·9	29·1	—	0·48
26	Italy	7·7	36·8	29·1	21·0	0·77
27	Roumania	6·5	29·7	26·5	—	0·32
28	Servia	12·4	43·6	26·7	—	1·69
29	Greece	6·1	28·4	20·8	—	0·76
	Average of Southern Europe	8·0	34·0	25·6	—	0·84
30	Russia, European (Eastern Europe)	9·4	49·4	35·7	26·7	1·37
	United States of America—					
	Massachusetts	9·4	25·7	19·2	16·3	0·65
	Vermont	8·4	21·0	14·3	13·1	0·67
	Connecticut	8·3	23·6	16·0	—	0·76
	Rhode Island	9·7	23·1	16·2	13·5	0·69
	Average of above four States	8·9	23·4	16·5	14·2	0·69

TABLE VII.—*Showing the Number and Proportion of Males and Females in each Country of Europe (Turkey excepted), and of some and all of the United States, at the latest Census of each.*

	Countries.	Year.	Population at the Latest Census.			Proportion of Males to 100 Females.
			Males.	Females.	Total.	
	Total of European countries...	—	155,616,200	159,723,846	315,340,046	97·4
1	England and Wales	1881	12,639,902	13,334,537	25,974,439	94·8
2	Scotland	—	1,799,475	1,936,098	3,735,573	92·9
3	Ireland	—	2,533,277	2,641,559	5,174,836	96·0
4	Norway	1875	876,762	930,138	1,806,900	94·3
5	Sweden	1880	2,215,243	2,350,425	4,565,668	94·3
6	Denmark	„	967,360	1,001,679	1,969,039	96·5
7	Finland	—	1,008,243	1,052,539	2,060,782	95·8
	Total of N.-Western Europe...	—	22,040,262	23,246,975	45,287,237	94·8
8	Holland	1879	1,983,164	2,029,529	4,012,693	97·7
9	Belgium	1880	2,758,469	2,761,540	5,520,009	99·9
10	France	1881	18,656,518	18,748,772	37,405,290	99·5
11	German Empire	—	—	—	—	—
12	Alsace-Lorraine	1880	770,108	796,562	1,566,670	96·7
13	Prussia	„	13,414,866	13,864,245	27,279,111	96·7
14	Saxony	„	1,445,330	1,527,475	2,972,805	94·6
15	Thuringia	„	476,634	498,569	975,203	95·6
16	Baden	„	765,310	804,944	1,570,254	95·1
17	Würtemberg	„	951,600	1,019,518	1,971,118	93·3
18	Bavaria	„	2,578,910	2,705,868	5,284,778	95·3
19	Switzerland	„	1,394,626	1,451,476	2,846,102	96·1
20	Poland, Russian	—	—	—	—	—
21	Austria	1880	10,819,737	11,324,507	22,144,244	95·5
22	Hungary	„	6,749,646	6,978,976	13,728,622	96·7
23	Croatia and Slavonia	„	953,624	960,216	1,913,480	99·3
	Total of Central Europe	—	63,718,182	65,472,197	129,190,379	97·3
24	Portugal	1864	2,005,540	2,182,870	4,188,410	96·4
25	Spain	1877	8,134,331	8,500,014	16,634,345	95·7
26	Italy	1881	14,265,383	14,194,245	28,459,628	100·5
27	Roumania (approximate)	1878	2,765,000	2,611,000	5,376,000	105·9
28	Servia	1880	865,422	834,850	1,700,272	103·6
29	Greece	1879	881,080	798,695	1,679,775	113·1
	Total of Southern Europe.....	—	28,916,756	29,121,674	58,038,430	99·2
	Russia, European	1882	40,941,000	41,883,000	82,824,000	97·7
	United States of America— *White population*					
	Massachusetts	1881	848,977	914,805	1,763,782	92·8
	Vermont	„	166,312	164,906	331,218	108·7
	Connecticut	„	299,980	310,789	610,769	96·5
	Rhode Island	„	130,014	139,925	269,939	92·9
	Total of above four States ...	—	1,445,283	1,530,425	2,975,708	94·0
	Total of all the United States.	—	25,518,820	24,636,963	50,155,783	103·6

TABLE VIII.—*Comparison of Birth and Death-Rates, and of Annual Excess of the former, showing the Natural Rate of Increase in Europe and in certain of the United States of America, in the whole period (mostly Eighteen Years) from* 1865 *to* 1883, *and in the Last Five Years,* 1878-79 *to* 1882-83.

	Countries.	Birth and Death-Rates, and Percentage Excess of Births.							
		Average of whole Period.			Percentage Excess of Births.	Average of last Five Years.		Percentage Excess of Births.	Difference between the two Periods.
		Periods.	Births.	Deaths.		Births.	Deaths.		Increase.	Decrease.
	Average of Europe—									
	Russia excluded	—	35·4	25·8	0·96	34·6	23·5	1·03	0·07	—
	„ included	—	38·7	28·1	1·06	38·2	26·1	1·15	0·09	—
1	England and Wales	1865–82	35·1	21·4	1·37	34·4	20·3	1·41	0·04	—
2	Scotland	1865–83	34·7	21·4	1·33	33·6	19·8	1·38	0·05	—
3	Ireland	„	26·4	17·8	0·86	24·5	18·8	0·57	—	0·37
4	Norway	„	30·8	17·2	1·36	31·0	16·8	1·42	0·06	—
5	Sweden	1865–82	30·2	18·9	1·13	29·6	17·6	1·20	0·07	—
6	Denmark	„	31·3	19·7	1·16	32·0	19·2	1·28	0·12	—
7	Finland	„	35·5	27·0	0·85	36·0	22·8	1·32	0·47	—
	Average of North-Western Europe	—	32·0	20·5	1·15	31·6	18·7	1·31	0·16	—
8	Holland	1865–82	35·9	24·6	1·13	35·5	22·1	1·34	0·21	—
9	Belgium	1865–83	31·5	22·4	0·91	31·1	21·2	1·01	0·10	—
10	France	1870–82	25·4	23·8	0·16	25·0	22·6	0·24	0·08	—
11	German Empire	1872–82	39·0	26·6	1·24	38·0	25·8	1·22	—	0·02
12	Alsace-Lorraine	„	34·0	26·0	0·80	32·5	25·3	0·72	—	0·08
13	Prussia	1867–83	38·8	26·5	1·23	37·3	25·0	1·23	—	—
14	Saxony	1865–83	42·4	29·0	1·34	41·9	28·6	1·33	—	0·01
15	Thuringia	„	36·8	24·9	1·19	36·0	24·0	1·20	0·01	—
16	Baden	„	37·8	27·3	1·05	34·9	24·8	1·01	—	0·04
17	Würtemberg	1865–82	42·6	31·5	1·11	40·0	28·3	1·17	0·06	—
18	Bavaria	1865–83	39·5	30·6	0·89	38·0	28·8	0·74	—	0·15
19	Switzerland	1870–83	30·2	23·1	0·71	28·7	21·8	0·69	—	0·02
20	Poland, Russian	1865–79	41·9	26·8	1·51	40·4	25·3	1·51	—	—
21	Austria	1865–83	38·4	31·0	0·74	38·4	30·2	0·82	0·08	—
22	Hungary	1865–82	43·0	38·2	0·48	43·1	37·1	0·60	0·12	—
23	Croatia and Slavonia	1874–80	45·3	38·7	0·66	43·9	32·9	1·10	0·44	—
	Average of Central Europe	—	37·6	28·3	0·93	36·5	26·6	0·99	0·06	—
24	Portugal	1860–62	31·9	21·9	—	—	—	—	—	—
25	Spain	1865–70 / 1880–83	33·9	29·1	0·48	30·0	26·1	0·39	—	0·09
26	Italy	1872–83	36·8	29·1	0·77	36·6	28·5	0·81	0·04	—
27	Roumania	1870–82	29·7	26·5	0·32	32·1	25·8	0·63	0·31	—
28	Servia	1879–83	43·6	26·7	1·69	45·4	26·8	1·86	0·17	—
29	Greece	1865–82	28·4	20·8	0·76	25·1	18·5	0·66	—	0·10
	Average of Southern Europe	—	34·0	25·6	0·84	33·8	25·1	0·87	0·03	—
30	Russia, European (Eastern Europe)	1867–76	49·4	35·7	1·37	50·2	34·8	1·54	0·17	—
	United States of America—									
	Massachusetts	1870–81	25·7	19·2	0·65	24·5	19·6	0·49	—	0·16
	Vermont	1872–76	21·0	14·3	0·67	—	15·7	—	—	—
	Connecticut	1865–81	23·6	16·0	0·76	22·7	16·1	0·66	—	0·10
	Rhode Island	1865–83	23·1	16·2	0·69	23·4	17·6	0·58	—	0·11
	Average of above four States	—	23·4	16·5	0·69	23·5	17·2	0·58	—	0·06

TABLE IX.—*Proportion of Marriages, Births, and Deaths to* 1,000 *Living Persons in each Division of the United Kingdom, and the Number of Emigrants from each as far as known in the Years* 1864-84.

Years.	Marriages.			Births.		
	England.	Scotland.	Ireland.	England.	Scotland.	Ireland.
1864	8·6	7·2	4·9	35·4	35·6	24·2
'65	8·8	7·4	5·6	35·4	35·5	25·9
'66	8·8	7·4	5·5	35·2	35·4	26·5
'67	8·3	7·0	5·4	35·4	35·1	26·3
'68	8·1	6·7	5·1	35·8	35·3	26·7
'69	8·0	6·7	5·0	34·8	34·3	26·7
'70	8·1	7·1	5·3	35·2	34·6	27·7
1871	8·3	7·1	5·4	35·0	34·5	28·1
'72	8·7	7·5	5·0	35·8	34·9	27·8
'73	8·8	7·8	4·8	35·4	34·8	27·1
'74	8·5	7·6	4·6	36·0	35·6	26·6
'75	8·4	7·4	4·5	35·4	35·2	26·1
'76	8·3	7·5	5·0	36·4	35·6	26·4
'77	7·9	7·2	4·7	36·0	35·3	26·2
'78	7·6	6·7	4·7	35·6	34·9	25·1
'79	7·2	6·4	4·3	34·7	34·3	25·2
'80	7·5	6·6	3·9	34·3	33·6	24·7
1881	7·6	6·9	4·2	33·9	33·7	24·5
'82	7·7	7·0	4·3	33·7	33·3	24·1
'83	7·7	7·0	4·3	33·3	32·5	23·6
'84	7·5	6·7	4·6	33·5	33·4	24·0
Average	8·1	7·1	4·8	35·1	34·6	25·9

Years.	Deaths.			Emigration.		
	England.	Scotland.	Ireland.	England.	Scotland.	Ireland.
1864	23·7	23·6	16·5	2·7	4·8	20·2
'65	23·2	22·3	16·7	2·9	4·0	18·1
'66	23·4	22·2	16·8	2·7	3·8	18·0
'67	21·7	21·3	17·0	2·5	3·0	14·7
'68	21·8	21·2	15·8	2·6	4·6	11·2
'69	22·3	22·9	16·4	4·1	6·8	12·2
'70	22·9	22·2	16·7	4·7	6·9	13·8
1871	22·6	22·2	16·4	4·5	5·7	13·2
'72	21·3	22·3	18·1	5·1	5·7	14·5
'73	21·0	22·4	18·3	5·3	6·2	16·9
'74	22·2	23·2	17·3	4·9	5·8	13·8
'75	22·7	23·3	18·5	3·5	4·2	9·7
'76	20·9	20·9	17·3	3·0	2·8	7·1
'77	20·3	20·6	17·5	2·6	2·4	7·2
'78	21·6	21·2	18·6	2·9	3·0	7·7
'79	20·7	20·0	19·6	4·1	5·1	8·8
'80 ...	20·6	20·5	19·8	4·3	5·9	17·6
1881	18·9	19·3	17·4	6·3	7·1	15·2
'82	19·6	19·3	17·4	6·1	8·5	17·5
'83	19·5	20·1	19·2	6·9	8·1	21·7
'84	19·6	19·4	17·6	5·4	5·7	15·3
Average	23·1	21·4	17·6	4·1	5·2	14·0

TABLE X.—*Distribution of the Population of each Division of the United Kingdom, France, and the United States, at each Census at which the Ages were recorded.*

ENGLAND.

Years.	Males.				Females.				Total.
	0—15.	15—45.	45 and above.	Total.	0—15.	15—45.	45 and above.	Total.	
1841	18·1	22·3	8·5	48·9	18·0	23·9	9·2	51·1	100
'51	17·8	22·3	8·9	49·0	17·6	23·6	9·8	51·0	„
'61	17·9	21·7	9·1	48·7	17·8	23·5	10·0	51·3	„
'71	18·1	21·4	9·2	48·7	18·0	23·1	10·2	51·3	„
'81	18·2	21·7	8·8	48·67	18·2	23·1	10·0	51·33	„

SCOTLAND.

1841	18·29	22·02	7·74	48·05	17·73	24·69	9·53	51·95	100
'51	17·95	22·09	8·18	48·22	17·28	24·24	10·26	51·78	„
'61	18·33	20·31	8·69	47·34*	17·69	24·08	10·89	52·66	„
'71	18·61	20·43	8·67	47·71	18·08	23·25	10·96	52·29	„
'81	18·53	21·26	8·38	48·17	18·03	23·07	10·73	51·83	„

IRELAND.

1841	19·42	21·84	7·88	49·18*	18·80	23·65	8·33	50·82*	100
'51	18·21	22·04	8·40	48·68*	17·61	24·05	9·63	51·32*	„
'61	16·69	21·91	10·28	48·92*	16·11	23·64	11·30	51·08*	„
'71	17·98	19·89	10·87	48·78*	17·40	21·98	11·81	51·22*	„
'81	17·81	20·57	10·53	48·95*	17·23	22·50	11·30	51·05*	„

FRANCE.

1851	13·88	23·23	12·62	49·73	13·43	23·21	13·63	50·27	100
'56	13·93	22·76	12·90	49·59	13·53	23·32	13·56	50·41	„
'61	13·67	22·97	13·20	49·84	13·39	22·98	13·79	50·16	„
'66	13·66	22·82	13·52	50·00	13·31	22·74	13·95	50·00	„
'72	13·73	22·24	13·84	49·81	13·32	22·59	14·28	50·19	„
'76	13·72	22·30	13·76	49·78	13·39	22·43	14·40	50·22	„
'81	13·50	22·36	14·02	49·88	13·24	22·33	14·55	50·12	„

UNITED STATES.

Years.	Males.				Females.				Total.
	0—15.	15—50.	50 and above.	Total.	0—15.	15—50.	50 and above.	Total.	
1840	22·38	24·53	4·18	51·09	21·34	23·44	4·13	48·91	100
'50	20·82	25·77	4·65	51·28*	20·11	24·15	4·44	48·72*	„
'60	20·30	26·04	4·97	51·36*	19·62	24·37	4·61	48·64*	„
'70	19·67	25·20	5·83	50·70	19·06	25·00	5·24	49·30	„
'80	18·87	25·77	6·35	50·99	18·28	24·87	5·86	49·01	„

* These totals include a small percentage, varying from 0·02 to 0·08, of which the ages were not specified.

TABLE XI.—*Comparison of the Distribution of the Population of each Division of the United Kingdom, France, and the United States at the latest Census of each Country.*

Countries.	Date of Census.	Males.			
		0—15.	15—45.	45 and above.	Total.
England	1881	18·2	21·7	8·8	48·67
Scotland	'81	18·53	21·26	8·38	48·17
Ireland	'81	17·81	20·57	10·53	48·95 *
France	'81	13·50	22·36	14·02	49·88
United States	'80	18·87	15—50 25·77	50 and above 6·35	50·99
		Females.			
England	1881	18·2	23·1	10·0	51·33
Scotland	'81	18·03	23·07	10·73	51·83
Ireland	'81	17·23	22·50	11·30	51·05 *
France	'82	13·24	22·33	14·55	50·12
United States	'80	18·28	24·87	5·86	49·01
		Total.			
England	1881	36·40	44·80	18·80	100
Scotland	'81	36·56	44·33	19·11	„
Ireland	'81	35·04	43·07	21·83	„
France	'82	26·74	44·69	28·57	„
United States	'80	37·15	50·64	12·21	„

* See note at last page.

TABLE XII.—*Showing the difference in the Distribution of the Population as regards Sex and Ages in several Countries of a different character, and the Change in each between the Earliest and Latest Censuses in which the Ages were recorded.*

A. ENGLAND AND WALES. Population increasing rapidly, 1·4 per cent. annually.

	1841.			1881.			Difference in 1881.					
							Increase.		Decrease.		Total.	
	M.	F.	Total.	M.	F.	Total.	M.	F.	M.	F.	In-crease.	De-crease.
All ages	48·87	51·13	100	48·66	51·34	100	—	0·21	0·21	—	—	—
Under 5	6·6	6·6	13·2	6·8	6·8	13·6	0·2	0·2	—	—	0·4	—
5 to 10	6·0	6·0	12·0	6·0	6·1	12·1	—	0·1	—	—	0·1	—
10 „ 15	5·5	5·3	10·8	5·4	5·4	10·8	—	0·1	0·1	—	—	—
15 „ 20	4·9	5·1	10·0	4·9	4·9	9·8	—	—	—	0·2	—	0·2
20 „ 25	4·5	5·2	9·7	4·3	4·7	9·0	—	—	0·2	0·5	—	0·7
25 „ 35	7·4	8·0	15·4	7·0	7·6	14·6	—	—	0·4	0·4	—	0·8
35 „ 45	5·5	5·7	11·2	5·4	5·8	11·2	—	0·1	0·1	—	—	—
45 „ 55	3·9	4·1	8·0	4·0	4·4	8·4	0·1	0·3	—	—	0·4	—
55 „ 65	2·6	2·7	5·3	2·8	3·1	5·9	0·2	0·4	—	—	0·6	—
65 „ 75	1·4	1·6	3·0	1·5	1·8	3·3	0·1	0·2	—	—	0·3	—
75 and above	0·63	0·77	1·4	0·56	0·73	1·3	—	—	0·07	0·04	—	0·1

B. SCOTLAND. Population increasing rapidly, 1·4 per cent. annually, and emigrating.

All ages	48·05	51·95	100	48·17	51·83	100	0·12	—	—	0·12	—	—
Under 5	6·6	6·4	13·0	6·9	6·8	13·7	0·3	0·4	—	—	0·7	—
5 to 10	6·0	5·8	11·8	6·1	6·0	12·1	0·1	0·2	—	—	0·3	—
10 „ 15	5·7	5·5	11·2	5·5	5·3	10·8	—	—	0·2	0·2	—	0·4
15 „ 20	5·0	5·4	10·4	5·1	5·0	10·1	0·1	—	—	0·4	—	0·3
20 „ 25	4·7	5·3	10·0	4·5	4·7	9·2	—	—	0·2	0·6	—	0·8
25 „ 35	7·2	8·1	15·3	6·7	7·4	14·1	—	—	0·5	0·7	—	1·2
35 „ 45	5·1	5·9	11·0	5·0	5·9	10·9	—	—	0·1	—	—	0·1
45 „ 55	3·5	4·1	7·6	3·7	4·5	8·2	0·2	0·4	—	—	0·6	—
55 „ 65	2·3	2·9	5·2	2·6	3·3	5·9	0·3	0·4	—	—	0·7	—
65 „ 75	1·3	1·6	2·9	1·4	2·0	3·4	0·1	0·4	—	—	0·5	—
75 and above.	0·64	0·88	1·52	0·61	0·93	1·54	—	0·05	0·03	—	0·02	—

C. IRELAND. Population decreasing 0·6 per cent. annually, and emigrating.

All ages	49·17	50·83	100	49·0	51·0	100	—	0·17	0·17	—	—	—
Under 5	6·4	6·2	12·6	5·6	5·5	11·1	—	—	0·8	0·7	—	1·5
5 to 10	6·7	6·5	13·2	6·1	5·9	12·0	—	—	0·6	0·6	—	1·2
10 „ 15	6·3	6·1	12·4	6·1	5·8	11·9	—	—	0·2	0·3	—	0·5
15 „ 20	5·3	5·5	10·8	5·3	5·5	10·8	—	—	—	—	—	—
20 „ 25	4·6	5·0	9·6	4·5	4·7	9·2	—	—	0·1	0·3	—	0·4
25 „ 35	6·9	7·6	14·5	5·7	6·5	12·2	—	—	1·2	1·1	—	2·3
35 „ 45	5·1	5·5	10·6	5·1	5·7	10·8	—	0·2	—	—	0·2	—
45 „ 55	3·6	3·9	7·5	4·1	4·5	8·6	0·5	0·6	—	—	1·1	—
55 „ 65	2·6	2·8	5·4	3·3	3·7	7·0	0·7	0·9	—	—	1·6	—
65 „ 75	1·1	1·1	2·2	2·1	2·1	4·2	1·0	1·0	—	—	2·0	—
75 and above.	0·56	0·62	1·2	1·07	1·08	2·15	0·51	0·46	—	—	0·9	—

TABLE XII.—*Showing the Distribution of the Population as regards Sex and Ages—Contd.*

D. FRANCE. Population decreasing 0·07 per cent. annually.

	1851.			1881.			Difference in 1883.					
							Increase.		Decrease.		Total.	
	M.	F.	Total.	M.	F.	Total.	M.	F.	M.	F.	In-crease.	De-crease.
All ages	49·73	50·27	100	49·88	50·12	100	0·15	—	—	0·15	—	—
Under 5	4·7	4·6	9·3	4·6	4·6	9·2	—	—	0·1	—	—	0·1
5 to 10	4·7	4·5	9·2	4·6	4·5	9·1	—	—	0·1	—	—	0·1
10 „ 15	4·5	4·3	8·8	4·2	4·1	8·3	—	—	0·3	0·2	—	0·5
15 „ 20	4·4	4·3	8·7	4·4	4·3	8·7	—	—	—	—	—	—
20 „ 25	4·1	4·3	8·4	4·4	4·7	9·1	0·3	0·4	—	—	0·7	—
25 „ 35	7·8	7·8	15·6	7·0	6·8	13·8	—	—	0·8	1·0	—	1·8
35 „ 45	6·9	6·8	13·7	6·7	6·5	13·2	—	—	0·2	0·3	—	0·5
45 „ 55	5·9	5·8	11·7	5·6	5·8	11·4	—	—	0·3	—	—	0·3
55 „ 65	3·7	4·4	8·1	4·5	4·6	9·1	—	0·2	0·8	—	1·0	—
65 „ 75	2·2	2·5	4·7	2·7	2·9	5·6	0·5	0·4	—	—	0·9	—
75 and above	0·8	1·0	1·8	1·15	1·32	2·5	0·35	0·32	—	—	0·7	—

E. UNITED STATES OF AMERICA.* Population increasing by immigration 3·05 per cent. annually.

All ages	51·09	48·91	100	50·99	49·01	100	—	0·10	0·10	—	—	—
Under 5	9·0	8·5	17·5	6·8	6·6	13·4	—	—	2·2	1·9	—	4·1
5 to 10	7·2	7·0	14·2	6·3	6·2	12·5	—	—	0·9	0·8	—	1·7
10 „ 15	6·2	5·9	12·1	5·7	5·5	11·2	—	—	0·5	0·4	—	0·9
15 „ 20	5·3	5·6	10·9	5·0	5·1	10·1	—	—	0·3	0·5	—	0·8
20 „ 30	9·3	8·8	18·1	9·3	9·0	18·3	—	0·2	—	—	0·2	—
30 „ 40	6·1	5·5	11·6	6·7	6·3	13·0	0 6	0·8	—	—	1·4	—
40 „ 50	3·8	3·5	7·3	4·8	4·5	9·3	1·0	1·0	—	—	2·0	—
50 „ 60	2·2	2·1	4·3	3·4	3·0	6·4	1·2	0·9	—	—	2·1	—
60 „ 70	1·2	1·2	2·4	2·0	1·8	3·8	0·8	0·6	—	—	1·4	—
70 „ 80	0·6	0·6	1·2	0·8	0·8	1·6	0·2	0·2	—	—	0·4	—
80 and above	0·2	0·2	0·4	0·2	0·2	0·4	—	—	—	—	—	—

* The census reports of the United States previous to 1870 do not afford the means of grouping the ages above 20 in the same manner as in the other countries. For 1880, however, they are grouped in a similar manner in the next table. The above comparisons for that country are between the censuses of 1840 and 1880.

Abstract of preceding Table.

	COUNTRIES COMPARED.									
	Earliest Census.					Latest Census.				
	England and Wales. 1841.	France. 1851.	Ireland. 1841.	Scotland. 1841.	United States. —	England and Wales. 1881.	France. 1881.	Ireland. 1881.	Scotland. 1881.	United States. 1880.
Males, all ages ...	48·87	49·73	49·17	48·05		48·66	49·88	49·0	48·17	50·99
Under 5	6·6	4·7	6·4	6·6		6·8	4·6	5·6	6·9	6·8
5—10.....	6·0	4·7	6·7	6·0		6·0	4·6	6·1	6·1	6·3
10—15.....	5·5	4·5	6·3	5·7		5·4	4·2	6·1	5·5	5·7
15—20.....	4·9	4·4	5·3	5·0		4·9	4·4	5·3	5·1	5·0
20—25.....	4·5	4·1	4·6	4·7		4·3	4·4	4·5	4·5	5·1
25—35.....	7·4	7·8	6·9	7·2		7·0	7·0	5·7	6·7	7·8
35—45.....	5·5	6·9	5·1	5·1		5·4	6·7	5·1	5·0	5·7
45—55.....	3·9	5·9	3·6	3·5		4·0	5·6	4·1	3·7	4·2
55—65.....	2·6	3·7	2·6	2·3		2·8	4·5	3·3	2·6	2·6
65—75.....	1·4	2·2	1·1	1·3		1·5	2·7	2·1	1·4	1·3
75 and above	0·63	0·8	0·56	0·64		0·56	1·15	1·07	0·61	0·5
Females, all ages..	51·13	50·27	50·83	51·95		51·34	50·12	51·0	51·83	49·01
Under 5	6·6	4·6	6·2	6·4		6·8	4·6	5·5	6·8	6·6
5—10.....	6·0	4·5	6·5	5·8		6·1	4·5	5·9	6·0	6·2
10—15.....	5·3	4·3	6·1	5·5		5·4	4·1	5·8	5·3	5·5
15—20.....	5·1	4·3	5·5	5·4		4·9	4·3	5·5	5·0	5·1
20—25.....	5·2	4·3	5·0	5·3		4·7	4·7	4·7	4·7	5·0
25—35.....	8·0	7·8	7·6	8·1		7·6	6·8	6·5	7·4	7·2
35—45.....	5·7	6·8	5·5	5·9		5·8	6·5	5·7	5·9	5·5
45—55.....	4·1	5·8	3·9	4·1		4·4	5·8	4·5	4·5	3·9
55—65.....	2·7	4·4	2·8	2·9		3·1	4·6	3·7	3·3	2·3
65—75.....	1·6	2·5	1·1	1·6		1·8	2·9	2·1	2·0	1·2
75 and above	0·77	1·0	0·62	0·88		0·73	1·32	1·08	0·93	0·5
Total, all ages ...	100	100	100	100		100	100	100	100	100
Under 5	13·2	9·3	12·6	13·0		13·6	9·2	11·1	13·7	13·4
5—10.....	12·0	9·2	13·2	11·8		12·1	9·1	12·0	12·1	12·5
10—15.....	10·8	8·8	12·4	11·2		10·8	8·3	11·9	10·8	11·2
15—20.....	10·0	8·7	10·8	10·4		9·8	8·7	10·8	10·1	10·1
20—25.....	9·7	8·4	9·6	10·0		9·0	9·1	9·2	9·2	10·1
25—35.....	15·4	15·6	14·5	15·3		14·6	13·8	12·2	14·1	15·0
35—45.....	11·2	13·7	10·6	11·0		11·2	13·2	10·8	10·9	11·2
45—55.....	8·0	11·7	7·5	7·6		8·4	11·4	8·6	8·2	8·1
55—65.....	5·3	8·1	5·4	5·2		5·9	9·1	7·0	5·9	4·9
65—75.....	3·0	4·7	2·2	2·9		3·3	5·6	4·2	3·4	2·5
75 and above	1·4	1·8	1·2	1·52		1·3	2·5	2·15	1·54	1·0

Information wanting.

Differences at Latest Census—					
Total at	Under 5	+ 0·4	− 0·1	− 1·5	+ 0·7
	5—10	+ 0·1	− 0·1	− 1·2	+ 0·3
	10—15	...	− 0·5	− 0·5	− 0·4
	15—20	− 0·2	− 0·1	...	− 0·3
	20—25	− 0·7	+ 0·7	− 0·4	− 0·8
	25—35	− 0·8	− 1·8	− 2·3	− 1·2
	35—45	...	− 0·5	+ 0·2	− 0·1
	45—55	+ 0·4	− 0·3	+ 1·1	+ 0·6
	55—65	+ 0·6	− 0·6	+ 1·6	+ 0·7
	65—75	+ 0·3	+ 0·9	+ 2·0	+ 0·5
	75 and above	− 0·1	+ 0·7	+ 0·9	+ 0·02

Information wanting.

TABLE XIII.—*Marriages, Births, and Deaths in European Russia, with details corresponding to those in Tables II—IV, based upon an average of the Years* 1867-80, *received from M. Troinitsky, Director of the Central Committee of Statistics in the Ministry of the Interior, St. Petersburg.*

		Average of 1867-80. Russian Official Table.	Average of 1867-78. Extract from Italian Tables.
MARRIAGES.	Number per 1,000 persons living—		
	For the whole period, 1867-80	9·3	9·4
	„ first five years, 1867-71	9·8	9·9
	„ last „ 1876-80	8·7	8·7
	Percentage difference. Decrease	11·2	12·1
	Percentage of early. Males under 25	68·0	68·5
	Females „ 20	57·4	58·0
	„ late. Males 40 and above	7·5	7·4
	Females 30 to 35	3·5	3·6
	„ 35 and above	5·1	5·2
	Total 30 „	8·6	8·8
	Percentage of widowers	18·0	18·6
	„ widows	12·5	13·0
BIRTHS.	Number per 1,000 persons living—		
	For the whole period	48·3	49·4
	„ first five years	48·4	49·2
	„ last „	48·0	50·2
	Percentage difference. Decrease	0·9	Increase 2·0
	Number born alive to one marriage contracted in the same year	5·2	5·3
	Number of illegitimate, in 100 births	2·7	2·9
	„ still-born, in 100 births, including still-born	Not registered	0·1
	„ „ illegitimate births		—
	Number of males born to 100 females—		
	Total of births, inclusive of still-born	—	—
	„ exclusive „	105	105
	Illegitimate births	104·6	106
	Still-born	—	128
DEATHS.	Number per 1,000 persons living—		
	For the whole period	35·5	35·7
	„ first five years	36·5	37·0
	„ last „	34·6	34·8
	Percentage difference. Decrease	5·2	6·0
	Number of males to 100 females, including still-born	105·5	105·0
	Number compared with births, on average of last five years—		
	Number of births to 1,000 persons living	48·0	50·2
	„ deaths „	34·6	34·8
	Proportion of deaths to 100 births	73·2	69
	Percentage excess of births over deaths, or natural rate of increase	1·3	1·5
	Percentage proportion of deaths at early ages—		
	Under 1 year	34·2	26·7
	From birth to 5 years	53·9	42·3
	Percentage difference in the proportion of deaths under 1 year between first three and last three years of record. Increase	9·0	6·1

APPENDIX B.

Remarks upon the Swedish Tables, Nos. XIV and XV.

In examining and analysing the Swedish demographic tables, I have availed myself of the abstracts and averages published by the Swedish Government in 1878, with a copy of which, together with other valuable information, I have been furnished by M. E. Sidenbladh, the Director of the Central Statistical Bureau of Sweden, and I have adopted the same periods, only extending the last from 1875 to 1883. They commence with the year 1751, and therefore comprise one hundred and thirty-three years.

Marriages, Sweden.

1°. The chief use of an average extending over so long a period appears to be the establishment of a standard with which to compare any period of years, or single year, within that period, and to examine the difference in the amount of changes in the three elements. Thus the whole period being—

For marriages	.....	7·8 in 1,000.
„ births	.....	33·4 „
„ deaths	.....	24·3 „

the average of the first twenty years (1751-70) and of the last twenty-three years (1861-83) were respectively—

		1751-70.		1861-83.	
Marriages per 1,000	.....	12·8	per cent. above the average	15·4	below the average.
Births	„	5·4		8·1	
Deaths	„	3·6		20·1	

While the differences between the two periods were—

		1751-70.	1861-83.
Marriages per 1,000	.....	8·8	6·6 = 26·1 per cent.
Births	„	35·2	30·7 = 12·8 „
Deaths	„	27·6	19·4 = 30·0 „

These figures show that there has been a general decrease, least in the births and greatest in the deaths; that the decrease in births did not correspond with the decrease of marriages, which was twice as great; and that the decrease in deaths was much more than twice as great as that of births (134 per cent.).

2°. There has been a continuous decrease in the marriage and death-rates since 1815, but not so in the birth-rates; and the

following figures bring out in strong relief the disproportions between the marriage and the birth-rates :—

	Marriages.	Difference.	Births.	Difference.	Deaths.	Difference.
1751–70	8·84	....	35·2	....	27·6	....
'71–90	8·22	7·0 —	35·8	1·6 +	28·3	2·5 +
'91–1815	8·54	3·9 +	32·3	9·8 —	26·8	5·3 —
1816–40	7·90	7·7 —	33·1	2·5 +	23·4	9·0 —
'41–60	7·45	5·6 —	31·9	3·4 +	21·2	9·0 —
'61–83	6·62	11·1 —	31·2	4·0 —	19·4	8·5 —

3°. In connection with the above observations it may be pointed out that the proportions of the sexes had changed considerably during the above period—

In 1751 there were 47·1 males to 52·9 females.
„ '83 „ 48·5 „ 51·5 „

and that since 1815, while the marriage-rate has been continuously decreasing, the number of children born alive to a marriage has increased, especially during the last twenty-three years, while there was an exceptional decrease in that number during the single period in which there was an increase in the proportion of marriages, viz. :—

	Marriage-Rate.	Difference.	Children Born Alive to a Marriage.	Difference.
1751–70	8·84	....	4·0	....
'71–90	8·22	7·0 —	3·9	2·5 —
'90–1815	8·54	3·9 +	3·8	2·5 —
1816–40	7·90	7·7 —	4·2	10·5 +
'41–60	7·45	5·6 —	4·2	Nil
'61–83	6·62	11·1 —	4·4	2·8 +

4°. The highest number of children born to a marriage was in 1869, viz., 5·4, the lowest in 1791, viz., 3·0.

5°. The highest and lowest marriage-rates in single years have been—

	Highest.		Lowest.
1791	12·0	1838	6·1
'92	10·1	'67	6·1
1810	10·8	'68	5·5
'11	10·7	'69	5·6
1759	9·9	'70	6·0
'60	9·9		

It will be observed that the highest years have come in pairs ; the lowest, with a single exception, have been within the last twenty years, and next to them come the last six years of the series, 1878-83.

The Swedish tables up to 1775 furnish separately for each group of years the proportion of males and females marrying to the population of each sex. The figures show a greater decrease among the former between the first and last group, viz., from 18·7 to 13·8, or 26·2 per cent., against 16·8 to 13·0, or 22·6 among females.

Births, Sweden.

1°. The average of the whole period was 33·4. The averages of each group of years with the percentage decrease, and a comparison with marriages and deaths, have already been shown.

2°. The Swedish tables up to 1875 show the proportion to 1,000 in the two sexes separately, and that while between the two extreme periods the proportion of males has decreased from 74·4 to 64·2, or 13·7 per cent., that of females has decreased from 66·9 to 60·5, or 9·6 per cent., resulting in the increased proportion of 1·4 in the male population already noticed.

3°. The five highest and lowest single years occurred, the former, with one exception, at the commencement of the period, and the latter within the present century, and three of them consecutively. The highest year, 39·4, in 1751, was 18·0 above the average; the lowest, 26·6, in 1809, was 20·0 below it. The mean of the two extreme years, 33·0 differed but 1·2 per cent. from the average of the one hundred and thirty-three, which was 33·4, coinciding remarkably with the observation made in the note at p. 515. It is by such observations that we may hope to arrive at constants or "laws," in this as in other branches of natural science.

4°. The years following the very high and very low years of marriage-rates above noticed have all exhibited a corresponding increase or decrease of birth-rates, and have all within a very short period shown a reaction, thus:—

High Years.	Marriages.	Births.	High Years.	Marriages.	Births.
1790	8·4	30·9	1808	8·1	30·4
'91	11·0	33·2	'09	7·8	26·6
'92	10·1	37·2	'10	10·8	33·1
'93	9·0	34·8	'11	10·7	35·7
'94	8·2	34·1	'12	9·2	33·9
'95	7·6	32·3	'13	7·8	29·9
			'14	7·5	31·4

Low Years.	Marriages.	Births.	Low Years.	Marriages.	Births.
1836	7·2	32·0	1866	6·7	32·9
'37	6·9	31·0	'67	6·1	30·7
'38	6·1	29·5	'68	5·5	27·5
'39	6·8	29·6	'69	5·6	28·3
'40	7·2	31·6	'70	6·0	28·7
			'71	6·5	30·3

It must be remarked, however, that since 1868-70 the birth-rate has never returned to the point at which it stood before 1867.

5°. The Swedish tables to 1875 contain interesting information as to the ages of the mothers throughout the whole period, distinguishing for the last five years, 1871-75, the mothers of legitimate and illegitimate children. I have thrown these into one table :—

Ages.	Total Number per 1,000 Births.		Number per 1,000 Births, 1871-75.	
	1791-1815.	1861-75.	Legitimate.	Illegitimate.
16—20	25	13	9	54
21—25	156	133	115	321
26—30	258	242	235	297
31—35	260	259	266	177
36—40	190	216	228	98
41—45	93	119	128	41
46—50	18	17	19	4

Has the increased age of the mothers anything to do with the increased proportion of males in the population already noticed? The returns do not distinguish the proportion of the sexes among the legitimate and illegitimate children. The difference in the ages of the mothers is very great.

Deaths, Sweden.

1°. The averages for the whole period and for the several groups of years, compared with those of marriages and births, have been already shown.

2°. There has been a large decrease during the present century in the deaths of both sexes, with a slight preponderance in favour of females. Under this head, as well as most others, the second period, 1771-90, was exceptional. Comparing 1751-70 with 1861-75, the decrease among men was 28·9 per cent., among females, 29·1, thus contributing, though in a slight degree, to the increased proportion of males in the population already noticed.

3°. The highest and lowest individual years have, like marriages and births, generally come in pairs together. The highest were all in the last century; the lowest within the last fifteen years :—

Highest.		Lowest.	
1763	33·2	1871	17·2
'72	37·6	'72	18·3
'73	53·6	'73	17·2
1808	33·9	1882	17·3
'09	39·0	'83	17·3

The highest year is 120 per cent. above the average of 24·3; the lowest is 29·2 below it.

4°. A heavy death-rate for one or more years preceded each of the occasions of an abnormal marriage and accompanying abnormal birth-rate :—

	Deaths.	Marriages.	Births.
1758	32·4	—	—
'59	—	9·9	34·3
'60	—	9·9	36·5
1789	32·2	8·0	32·4
'90	29·4	8·4	30·9
'91	—	11·0	33·2
'92	—	10·1	37·2
'93	—	9·0	34·8
1808	33·9	8·1	30·4
'09	39·0	7·8	26·6
'10	—	10·8	33·1
'11	—	10·7	35·7
'12	—	9·2	33·9

5°. The Table XIV furnishes, in the columns of the proportion of deaths from certain epidemic diseases, an indication of the causes of excessive mortality in certain years, and the character of the harvest, also shown in the same table, will often point to the origin of those epidemics.

Growth of the Population.

6°. A glance at the column of excess of births over deaths will show the difference in the amount and steadiness of increase within the last forty years.

In 1751-90	annual average	7·49
„ '91-1840	„	8·11
„ 1841-83	„	11·28

7°. The highest increase in any one year took place in—

1767	19	per cent. above the deaths.
1860	16·8	„
'23	16·0	„
'25	16·0	„
'59	14·4	„

The lowest in the only five years in which the deaths exceeded the births, viz. :—

1800	2·8	per cent. below the deaths.
'08	3·4	„
'09	12·4	„
1772	8·8	„
'73	27·2	„

8°. The last column shows the annual increase or decrease of the population, including changes by emigration and immigration.

I have reserved to the close an examination of the differences in the fluctuations of the three elements. The Swedish tables confirm Quetelet's statement, but require a modification, and they show how much less births fluctuate than either marriages or deaths. There is great instability in all the elements. The births and deaths rarely remained on the rise or fall more than two years at a time. The number, out of one hundred and thirty-four years, that each remained either on the rise or fall was as follows:—

Number of Occasions.

Number of Years.	Marriages.			Births.			Deaths.		
	Rise.		Fall.	Rise.		Fall.	Rise.		Fall.
No change		9			5			5	
1 year	5		11	16		20	14		19
2 years.....	7		4	12		10	10		5
3 „	10		18	7		4	8		6
4 „	—		4	—		1	2		4
5 „	—		2	—		1	—		—
6 „	—		1	—		1	—		—
	22	9	40	35	5	37	34	5	34

This shows the oscillations from one scale to the other; the number of years that each element remained in the same scale; and here marriages showed much more stability than either deaths or births. On thirty-five occasions they remained in the same scale for three or more years, while deaths remained in it only twenty times, and births fourteen. But the oscillations within those periods of rise and fall may have been, and were, greater in the marriages than in either deaths or births. Out of one hundred and thirty-three years, the fluctuations of each were:—

	Marriages.	Births.	Deaths.
5 per cent.	87	105	77
10 „	15	10	50
Above 10 per cent.	31	18	6
	133	133	133

Marriages therefore appear to be more stable in sequences of years, and to vary more in the amount of their fluctuations, which scarcely leads to the inference which Quetelet drew from the information before him. Further evidence on this point has been furnished in the note at p. 515.

TABLE XIV.—*Showing the Annual Marriage, Birth, and Death-Rates in Sweden; also the Quality of the Harvest; the Proportion of Deaths from Small Pox and other Diseases; Recorded Number of the Population from* 1749 *to* 1883.

Quality of the Harvest:— 0 = Failure. III = Slender.
I = Almost total failure. IV = Poor.
II = Scanty. V = Under average.

Years.	Quality of Harvest. The Signs + and − mark the conspicuously Good and Bad Years.	Marriages.	Births.		Deaths.	Annual Increase or Decrease			
						Marriages.		Births. Children Born Alive.	
		Number to 1,000 Persons Living.	Number to 1,000 Persons Living.	Number to One Marriage Contracted.	Number to 1,000 Persons Living.	Increase.	Decrease.	Increase.	Decrease.
Number in 1749		*15,046*	*59,483*		*49,516*				
1749....	II	8·6	34·3	3·9	28·6	—	—	—	—
'50....	IX +	9·3	37·0	3·9	27·0	0·7	—	2·7	—
1751....	VI	9·4	39·4	4·2	26·4	0·1	—	2·4	—
'52....	,,	9·4	36·4	3·9	27·6	nil	—	—	3·0
'53....	IX +	8·9	36·8	4·1	24·2	,,	0·5	0·4	—
'54....	VI	9·6	37·9	3·9	26·6	0·7	—	1·1	—
'55....	,,	9·3	38·0	4·1	27·7	—	0·3	0·1	—
'56....	I −	8·6	36·6	4·2	28·0	—	0·7	—	1·4
'57....	,, −	8·1	33·1	4·1	29·9	—	0·5	—	3·5
'58....	VI	8·2	33·8	4·1	32·4	0·1	—	0·7	—
'59....	IX +	9·9	34·3	3·6	26·3	1·7	—	0·5	—
'60....	VI	9·9	36·5	3·7	24·8	nil	—	2·2	—
1761....	II	9·6	35·1	3·7	25·8	—	0·4	—	1·4
'62....	0 −	9·1	35·6	3·9	31·2	—	0·5	0·5	—
'63....	I −	8·7	35·4	4·1	33·2	—	0·4	—	0·2
'64....	,, −	8·8	35·1	4·0	27·4	0·1	—	—	0·3
'65....	VI	8·2	33·8	4·1	27·8	—	0·7	—	1·3
'66....	,,	8·3	34·1	4·1	25·2	0·1	—	0·3	—
'67....	,,	8·3	35·7	4·3	25·7	nil	—	1·6	—
'68....	IX +	8·5	33·9	4·0	27·3	0·2	—	—	1·8
'69....	,, +	8·2	33·4	4·1	27·3	—	0·3	—	0·5
'70....	VI	8·2	33·3	4·1	26·2	—	nil	—	0·1
1771....	0 −	7·8	32·5	4·2	27·9	—	0·4	—	0·8
'72....	I −	6·9	28·8	4·2	37·6	—	0·9	—	3·7
'73....	VI	7·8	26·4	3·3	53·6	0·9	—	—	2·4
'74....	,,	8·8	34·3	3·9	22·4	1·0	—	7·9	—
'75....	I −	9·5	35·4	3·6	24·9	0·7	—	1·1	—
'76....	VI	9·0	33·1	3·7	22·6	—	0·5	—	2·3
'77....	IX +	9 1	33·2	3·6	24·9	0·1	—	0·1	—
'78....	VI	9·1	35·0	3·9	26·6	nil	—	1·8	—
'79....	IX +	8·7	36·9	4·2	28·5	—	0·4	1·9	—
'80....	I −	8·5	36·0	4·2	21·7	—	0·2	—	0·9
1781....	I −	7·8	33·5	4·3	25·6	—	0·7	—	2·5
'82....	,, −	7·7	32·1	4·2	27·3	—	0·1	—	1·4
'83....	,, −	8·0	30·3	3·8	28·1	0·3	—	—	1·8
'84....	VI	7·5	31·5	4·2	29·7	—	0·5	1·2	—
'85....	I −	7·8	31·4	4·0	28·3	0·3	—	—	0·1
'86....	VI	8·0	33·0	4·1	26·0	0·2	—	1·6	—
'87....	IX ·	8·0	31·7	4·0	24·1	nil	—	—	1·3
'88....	VIII +	7·9	34·3	4·3	20·4	—	0·1	2·6	—
'89....	VI	8·0	32·4	4·0	32·2	0·1	—	—	1·9
'90....	IX +	8·4	30·9	3·7	29·4	0·4	—	6·5	—

* See note,

Proportion of Births to Marriages; the Annual Increase or Decrease of each Rate; the the Excess of Births over Deaths, and the Annual Rate of Increase (or Decrease) in the

VI = Average.
VII = Above average. IX = Abundant.
VIII = Good.

of each Rate.		Percentage Proportion out of Deaths from all causes ascribed to certain Zymotic Diseases.		Rate of Natural Increase of the Population. (Excess of Births over Deaths per 1,000.)	Percentage Annual Increase of the Number of the Population.	Years.
Deaths.						
Increase.	Decrease.	From Small Pox and Measles.*	From Typhus and Typhoid Fevers.			
—	—	9·0	8·0	5·7	0·57	1749
—	1·6	13·0	7·0	10·0	0·97	'50
—	0·6	12·0		13·0	1·27	1751
1·2	—	21·0		8·8	0·75	'52
—	3·4	18·0	7·0	12·5	1·12	'53
2·3	—	14·0		11·3	0·99	'54
1·1	—	9·0		10·3	0·89	'55
—	0·3	15·0	8·0	8·6	0·72	'56
1·9	—	18·0	10·0	3·2	0·18	'57
2·5	—	12·0	9·0	1·4	− 0·14	'58
—	6·1	8·0	11·0	8·0	+ 0·50	'59
—	1·5			11·7	0·87	'60
1·0	—	12·0	10·0	9·3	1·25	1761
5·4	—	16·0		4·4	0·71	'62
2·0	—	18·0	13·0	2·2	0·49	'63
—	5·8		14·0	7·7	0·73	'64
0·4	—	8·0	11·0	6·0	0·55	'65
—	2·6		11·0	8·9	0·85	'66
0·5	—		10·0	19·0	0·80	'67
1·6	—	19·0		6·6	0·47	'68
nil	—		8·0	6·1	0·42	'69
—	1·1	10·0		7·1	0·77	'70
1·7	—	7·5	10·5	4·6	0·52	1771
9·7	—		17·0	− 8·8	− 0·79	'72
16·0	—	11·5	19·0	− 27·2	− 2·60	'73
—	31·2	From	11·0	+ 11·9	+ 1·29	'74
2·5	—	small pox	10·0	10·5	1·15	'75
—	2·4	alone	12·0	10·6	1·01	'76
2·4	—	3·5	9·0	8·3	0·78	'77
1·7	—	12·0	8·0	8·4	0·78	'78
1·9	—	25·5	7·5	8·4	0·79	'79
—	6·8	7·0		14·3	1·37	'80
3·9	—	3·0	8·0	7·9	0·69	1781
1·7	—	4·0	9·0	4·8	0·38	'82
0·8	—	6·5	10·0	2·2	0·12	'83
1·6	—	19·5		1·8	0·08	'84
—	1·4	8·0	11·0	3·1	0·21	'85
—	2·3	1·0	12·5	7·0	0·29	86
—	1·9	3·0		7·6	0·36	'87
2·3	—	9·5	10·0	7·9	0·27	'88
5·8	—		20·0	0·2	− 0·37	'89
—	2·8		18·0	9·5	− 0·26	'90

p. 592.

TABLE XIV.—*Showing the Annual Marriage,*

Years.	Quality of Harvest. The Signs + and − mark the conspicuously Good and Bad Years.	Marriages.	Births.		Deaths.	Annual Increase or Decrease			
						Marriages.		Births. Children Born Alive.	
		Number to 1,000 Persons Living.	Number to 1,000 Persons Living.	Number to One Marriage Contracted.	Number to 1,000 Persons Living.	Increase.	Decrease.	Increase.	Decrease.
1791....	VIII +	11·0	33·2	3·0	25·8	2·6	—	—	5·7
'92....	VI	10·1	37·2	3·7	24·1	—	0·9	4·0	—
'93....	VIII +	9·0	34·8	3·9	24·4	—	1·1	—	2·4
'94....	„ +	8·2	34·1	4·1	23·7	—	0·8	—	0·7
'95....	„ +	7·6	32·3	4·2	28·0	—	0·6	—	1·8
'96....	VI	8·6	34·6	4·0	24·7	1·0	—	2·3	—
'97....	„	8·4	34·6	4·1	23·8	—	0·2	nil	—
'98....	I −	8·3	34·1	4·1	23·1	—	0·1	—	0·5
'99....	„ −	7·4	32·1	4·4	25·2	—	0·9	—	2·0
1800....	„ −	7·5	28·6	3·9	31·4	0·1	—	—	3·5
1801....	VI	7·3	30·0	4·1	26·1	—	0·2	1·4	—
'02....	„	7·8	31·8	4·1	23·7	0·5	—	1·8	—
'03....	VIII +	8·2	31·4	3·8	23·7	0·4	—	—	0·4
'04....	VI	8·1	31·9	4·0	24·8	—	0·1	0·5	—
'05....	IV	8·4	31·8	3·8	23·4	0·3	—	—	0·1
'06...	VI	8·0	30·8	3·8	27·1	—	0·4	—	1·0
'07....	V	8·2	31·3	3·8	25·6	0·2	—	0·5	—
'08....	IV	8·1	30·4	3·7	33·9	—	0·1	—	0·9
'09....	VIII +	7·8	26·6	3·4	39·0	—	0·3	—	3·8
'10....	„ +	10·8	33·1	3·1	31·8	3·0	—	6·5	—
1811....	III	10·7	35·7	3·3	29·0	—	0·1	2·6	—
'12....	II −	9·2	33·9	3·7	30·4	—	1·5	—	1·8
'13....	V	7·8	29·9	3·8	27·5	—	1·4	—	4·0
'14....	VII	7·5	31·4	4·1	25·1	—	0·3	1·5	—
'15....	VIII +	9·6	35·1	3·6	23·5	2·1	—	3·7	—
'16....	II −	9·3	35·6	3·8	22·7	—	0·3	0·5	—
'17....	V	8·3	33·5	4·0	24·3	—	1·0	—	2·1
'18...	III	8·5	34·0	4·0	24·4	0·2	—	0·5	—
'19....	VII	8·1	33·1	4·1	27·4	—	0·4	—	0·9
'20....	IX +	8·4	33·1	3·9	24·5	0·3	—	—	nil
1821....	VII	8·8	35·6	4·0	25·6	0·4	—	2·5	—
'22....	V	9·3	36·1	3·9	22·6	0·5	—	0·5	—
'23....	VIII +	9·0	37·2	4·1	21·2	—	0·3	1·1	—
'24....	„ +	8·8	34·8	3·9	20·8	—	0·2	—	2·4
'25....	VI	8·6	36·7	4·2	20·7	—	0·2	1·9	—
'26...	II −	8·1	35·1	4·3	22·6	—	0·5	—	1·6
'27...	VIII +	7·2	31·4	4·3	23·1	—	0·9	—	3·7
'28....	„ +	7·9	33·5	4·3	26·7	0·7	—	2·1	—
'29....	VI	7·9	35·0	4·4	29·0	nil	—	1·5	—
'30....	V	7·7	33·1	4·3	24·1	—	0·2	—	1·9
1831....	IV	6·9	30·6	4·4	26·0	—	0·8	—	2·5
'32....	VIII +	7·2	31·0	4·3	23·4	0·3	—	0·4	—
'33....	VI	7·8	34·3	4·4	21·7	0·6	—	0·3	—
'34....	V	8·0	33·9	4·2	25·7	0·2	—	—	0·4
'35....	VII	7·5	32·9	4·4	18·6	—	0·5	—	1·0
'36....	VI	7·2	32·0	4·4	20·0	—	0·3	—	0·9
'37....	IV	6·9	31·0	4·5	24·6	—	0·3	—	1·0
'38....	VII	6·1	29·5	4·8	24·1	—	0·8	—	1·5
'39....	VI	6·8	29·6	4·4	23·6	0·7	—	0·1	—
'40...	VII	7·2	31·6	4·4	20·4	0·4	—	2·0	—

* See note,

Birth, and Death-Rates, &c., in Sweden—Contd.

of each Rate.		Percentage Proportion out of Deaths from all causes ascribed to certain Zymotic Diseases.		Rate of Natural Increase of the Population. (Excess of Births over Deaths per 1,000.)	Percentage Annual Increase of the Number of the Population.	Years.
Deaths.		From Small Pox.*	From Typhus and Typhoid Fevers.			
Increase.	Decrease.					
—	3·6	5·0	15·0	7·4	+ 0·95	1791
—	1·7			13·1	1·51	'92
0·3	—	4·0		10·4	1·24	'93
—	0·7	7·0		10·4	1·25	'94
4·3	—	11·0		4·3	0·62	'95
—	3·3	8·0	8·0	9·9	0·86	'96
—	0·9	3·0		10·8	0·96	'97
—	0·7			11·0	0·92	'98
2·1	—	6·0		6·9	0·54	'99
6·2	—	16·0		— 2·8	— 0·41	1800
—	4·7	10·0	9·0	+ 3·9	+ 0·37	1801
—	2·4			8·1	0·78	'02
—	nil			7·7	0·74	'03
1·1	—		11·0	7·1	0·68	'04
—	1·4	2·5		8·4	0·80	'05
3·7	—			3·7	0·05	'06
—	1·5		13·0	5·7	0·25	'07
8·3	—		15·0	— 3·4	— 0·65	'08
5·1	—		23·0	— 12·4	— 1·52	'09
—	7·2	1·0	12·0	+ 1·3	— 0·18	'10
—	2·8			+ 6·7	+ 0·79	1811
1·4	—			3·5	0·46	'12
—	2·9			2·4	0·37	'13
—	2·4			6·3	0·74	'14
—	1·6	0·7	9·5	11·6	1·25	'15
—	0·8			12·9	1·31	'16
1·6	—			9·2	0·96	'17
0·1	—			9·0	0·99	'18
3·0	—			5·7	0·60	'19
—	2·9			8·6	0·89	'20
1·1	—			10·0	1·01	1821
—	3·0			13·5	1·36	'22
—	1·6	0·5		16·0	1·61	'23
—	0·2		7·5	14·0	1·41	'24
—	0·1	2·2		16·0	1·63	'25
1·9	—			12·5	1·22	'26
0·5	—			8·3	0·81	'27
3·6	—	0·4		6·8	0·67	'28
2·3	—		11·5	6·0	0·57	'29
—	4·9			9·0	0·87	'30
1·9	—	1·0	—	4·6	0·45	1831
—	2·6	0·9	—	7·6	0·75	'32
—	1·7	1·8	—	12·6	1·24	'33
4·0	—	1·4	Cholera 16·6	8·2	0·81	'34
—	7·1		—	14·3	1·42	'35
1·4	—	0·3	—	12·0	1·12	'36
4·6	—		—	6·4	0·55	'37
—	0·5	2·5	—	5·4	0·46	'38
—	0·5		—	6·0	0·52	'39
—	3·2	1·0	—	11·2	1·04	'40

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TABLE XIV.—*Showing the Annual Marriage,*

Years.	Quality of Harvest. The Signs + and − mark the conspicuously Good and Bad Years.	Marriages.	Births.		Deaths.	Annual Increase or Decrease			
						Marriages.		Births. Children Born Alive.	
		Number to 1,000 Persons Living.	Number to One Marriage Contracted.	Number to 1,000 Persons Living.	Number to 1,000 Persons Living.	Increase.	Decrease.	Increase.	Decrease.
1841....	II −	7·2	30·5	4·3	19·4	nil	—	—	1·1
'42....	V	7·1	31·8	4·5	21·1	—	0·1	1·3	—
'43....	IV	7·2	31·0	4·3	21·5	0·1	—	—	0·8
'44....	V	7·4	32·3	4·3	20·3	0·2	—	1·3	—
'45....	III	7·3	31·6	4·3	18·8	—	0·1	—	0·7
'46....	V	6·9	30·9	4·3	21·8	—	0·4	—	1·6
'47....	VI	6·8	29·9	3·4	23·7	—	0·1	—	0·1
'48....	VII	7·3	30·5	4·1	19·7	0·5	—	0·6	—
'49....	V	7·8	33·1	4·2	19·8	0·5	—	2·6	—
'50....	VI	7·6	32·0	4·2	19·8	—	0·2	—	1·1
1851....	V	7·4	31·9	4·3	20·7	—	0·2	—	0·1
'52 ...	VII	6·8	30·8	4·5	22·7	—	0·6	—	1·1
'53....	V	7·2	31·4	4·4	23·7	0·4	—	0·6	—
'54....	VI	7·7	33·8	4·4	19·8	0·5	—	2·4	—
'55....	VII	7·5	31·9	4·2	21·4	—	0·2	—	1·9
'56....	V	7·4	32·7	4·2	21·8	—	0·1	0·8	—
'57....	VI	7·8	32·4	4·2	27·6	0·4	—	—	0·3
'58....	VII	8·1	34·5	4·3	21·7	0·3	—	2·1	—
'59....	VI	8·3	34·7	4·2	20·1	0·2	—	0·2	—
'60 ..	„	7·8	34·5	4·4	17·7	—	0·5	—	0·2
1861....	IV and V	7·3	32·3	4·5	18·5	—	0·5	—	2·2
'62....	VII	7·1	33·2	4·7	21·4	—	0·2	0·9	—
'63....	VI	7·3	33·4	4·6	19·3	0·2	—	0·2	—
'64....	VII	7·0	33·4	4·8	20·2	—	0·3	nil	—
'65....	V	7·1	32·6	4·6	19·4	0·1	—	—	0·8
'66....	VI	6·7	32·9	4·2	20·6	—	0·4	0·3	—
'67....	III	6·1	30·7	5·1	19·6	—	0·5	—	2·2
'68....	VI	5·5	27·5	5·4	21·0	—	0·6	—	3·2
'69 ...	VII	5·6	28·3	5·0	22·3	0·1	—	0·8	—
'70....	VIII +	6·0	28·7	5·2	19·8	0·4	—	0·4	—
1871....	VIII +	6·5	30·3	4·7	17·2	0·5	—	1·6	—
'72....	VI	6·9	29·9	4·3	16·3	0·4	—	—	0·4
'73....	VII	7·3	30·6	4·2	17·2	0·4	—	0·7	—
'74....	VI	7·3	30·7	4·2	20·3	nil	—	0·1	—
'75....	„	7·1	31·0	4·4	20·3	—	0·2	0·3	—
'76....	V	7·0	30·7	4·4	19·5	—	0·1	—	0·3
'77....	„	6·9	30·9	4·5	18·5	—	0·1	0·2	—
'78....	VII	6·4	29·7	4·6	18·0	—	0·5	—	1·2
'79....	VI	6·2	30·3	4·9	17·0	—	0·2	0·6	—
'80....	VII	6·3	29·4	4·6	18·1	0·1	—	—	0·9
1881....	V	6·2	29·0	4·7	17·7	—	0·1	—	0·4
'82....	VII	6·3	29·3	4·6	17·3	0·1	—	0·3	—
'83....	V and VI	6·4	28·8	4·5	17·3	0·1	—	—	0·5
Number in 1883		*27,449*	*132,875*		*79,487*				

* See note,

Birth, and Death-Rates, &c., in Sweden—Contd.

of each Rate.		Percentage Proportion out of Deaths from all causes ascribed to certain Zymotic Diseases.		Rate of Natural Increase of the Population. (Excess of Births over Deaths per 1,000.)	Percentage Annual Increase of the Number of the Population.	Years.
Deaths.						
Increase.	Decrease.	From Small Pox.*	From Typhus and Typhoid Fevers.			
—	1·0	0·4	—	11·1	1·09	1841
1·7	—	0·1	—	10·7	1·06	'42
0·4	—		—	9·5	0·93	'43
—	1·2		—	12·0	1·19	'44
—	1·5	0·1	—	12·8	1·26	'45
3·0	—		—	8·1	0·80	'46
1·9	—		—	6·2	0·57	'47
—	4·0		—	10·8	1·05	'48
0·1	—	0·5	—	13·5	1·29	'49
—	nil	2·0	—	12·2	1·20	'50
0·9	—	3·0	Cholera and dysentery	11·2	0·98	1851
2·0	—	2·0	—	8·1	0·68	'52
1·0	—	0·3	12·0	7·7	0·65	'53
—	3·9		6·8	14·0	1·26	'54
1·6	—	0·6	5·3	10·5	0·91	'55
0·4	—		4·1	10·9	0·88	'56
5·8	—	0·5	16·2	4·8	0·40	'57
—	5·9	1·6	3·5	12·8	1·26	'58
—	1·6	1·9	4·2	14·4	1·43	'59
—	2·4	1·0	0·9	16·8	1·90	'60
			Zymotic Diseases.†			
0·8	—	—	11·8	13·8	1·49	1861
2·9	—	0·3	18·2	11·8	1·24	'62
—	2·1		14·4	14·1	1·43	'63
0·9	—	0·9	13·2	13·2	1·18	'64
—	0·8		16·3	13·2	1·08	'65
1·2	—		19·6	12·3	1·13	'66
—	1·0	1·5	10·2	11·1	0·84	'67
1·4	—		16·4	6·5	— 0·54	'68
1·3	—		20·3	6·0	— 0·34	'69
—	2·5	0·9	14·9	8·9	+ 0·23	'70
2·6	—	0·5	10·4	13·1	0·86	1871
—	0·9		10·7	13·6	1·10	'72
0·9	—	1·5	13·9	13·4	1·12	'73
3·1	—	4·6	17·4	10·4	1·01	'74
nil	—	2·3	13·9	10·7	0·96	'75
—	0·8	0·7	17·9	11·2	—	'76
—	1·0	0·4	19·0	12·4	—	'77
—	0·5		19·6	11·7	—	'78
—	1·0		16·9	13·3	—	'79
1·1	—	0·2	15·9	11·3	—	'80
—	0·4		14·8	11·3	—	1881
—	0·4		17·0	12·0	—	'82
—	nil		15·5	11·5	—	'83

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TABLE XV.—*Population of Sweden, and various Statistical Results relating thereto, in each Year from* 1854 *to* 1884, *being a continuation of a Table published by Mr. Frederick Hendriks in the* JOURNAL OF THE STATISTICAL SOCIETY OF LONDON, vol. xxv, part 2, *June*, 1862, 138 pp. *et seq.*

Years.	Quality of the Harvest.	Population.	Marriages.	Children Born Alive.	Deaths.
1854....	VI	3,608,124	27,585	120,107	70,846
'55....	VII	3,641,011	27,253	115,072	77,734
'56....	V	3,672,988	27,221	115,082	79,618
'57....	VI	3,687,601	28,531	119,349	101,491
'58....	VII	3,734,240	30,092	129,039	80,498
'59....	VI	3,787,735	31,125	131,605	75,720
'60....	VI	3,859,728	29,839	133,162	67,502
1861....	IV and V	3,917,339	28,272	126,634	71,829
'62....	VII	3,965,899	27,825	131,584	84,350
'63....	VI	4,022,564	29,013	134,279	77,227
'64....	VII	4,070,061	28,248	136,004	81,937
'65....	V	4,114,141	28,944	134,281	79,216
'66....	VI	4,160,677	27,797	136,989	82,666
'67....	III	4,195,681	25,440	128,832	82,072
'68....	„	4,173,080	22,833	114,955	87,807
'69....	VII	4,158,757	23,503	117,677	92,775
'70....	VIII	4,168,525	25,072	119,838	82,449
1871....	„	4,204,177	27,187	127,333	72,046
'72....	VI	4,250,412	29,470	126,983	68,802
'73....	VII	4,297,972	31,257	131,643	73,525
'74....	VI	4,341,559	31,422	133,249	87,760
'75....	„	4,383,291	30,762	135,958	88,439
'76....	V	4,429,713	31,184	135,890	86,334
'77....	„	4,484,542	30,674	138,476	83,175
'78....	VII	4,531,863	29,151	134,464	81,418
'79....	VI	4,578,901	28,635	139,043	77,152
'80....	VII	4,565,668	28,919	134,262	82,753
1881....	V	4,572,245	28,301	132,804	80,800
'82....	VII	4,579,115	28,967	134,300	79,406
'83....	V and VI	4,603,595	29,449	132,875	79,487
'84....	VII and VIII	4,644,448	(Returns	not yet arran	ged.)

NOTES *on preceding* TABLE, No. XIV.

* It is stated that one-third of the deaths in this column down to the year 1774 were caused by measles.

† In these are included small pox, measles, scarlatina, diphtheria, croup, hooping-cough, typhoid and intermittent fevers, dysentery, cholera, diarrhœa, mumps, scurvy, ergotism, and puerperal fever.

NOTE.—The population increased between 1748 and 1883 (135 years) as follows:—

From males.....	813,002	to	2,230,782
„ females	923,480	„	2,372,813
Total	1,736,482		4,603,595

	Increase per cent. Total.	Annual.
Males	174	1·29
Females	157	1·16
Total	165	1·22

Proceedings *on the* 17*th* November, 1885.

Dr. Mouat expressed the pleasure he experienced in proposing a cordial vote of thanks to the President for his able and exhaustive address on a subject of the greatest interest and importance in the international relations of statistics. He also dwelt upon the exceptional care and attention bestowed by the President on the organisation and conduct of the Statistical Jubilee, and on its eminently successful issue, which was in a very great measure due to the good fortune of the Society in possessing so exceptionally earnest, capable, and practical a chief at so important an epoch in its history. The applause which greeted the address lightened the task which Dr. Mouat had undertaken, and but few words were needed from him to recommend it, the more so as it was not the practice of the Society to discuss presidential addresses. In the present instance this was to be regretted, as the address dealt with a comparatively new kind of statistical science—demography—and was full of facts and figures well suited for consideration and discussion. It would however amply repay careful study in the closet, when all the figures and facts could be considered in greater detail than was possible in the necessarily brief abstract presented to the opening meeting of a fresh session of its active life.

Dr. Mouat concluded by submitting the proposal to the Society.

Mr. Frederick Hendriks, in seconding the motion, said it was very gratifying to have heard so admirable an address by a gentleman who dealt with the very large subjects on which the paper was based, not with the narrowness of a specialist, but from a large and statesmanlike point of view. He was sure when they came to study it they would find it interesting, not only to the actuary and statist, but also to other men of science and economists. It presented facts in the most convenient and intelligible form, and, if it were in order to discuss it, he was sure they would have none but words of commendation for the great industry and clearness with which their respected President had brought the facts before them. He might perhaps be allowed to say a few words with regard to one point to which the President had adverted, namely, the bequest of their late lamented colleague and President, Dr. Guy. He had the authority of the late Dr. Guy's family for confirming that statement as to a very munificent bequest, amounting to some thousands of pounds, and which would ultimately come into the possession of the Society, having been devised by Dr. Guy, subject to the life of his widow, but with accumulations of interest upon by far the larger part of it, and under the care of trustees until the decease of that lady. It must be very gratifying to their esteemed President to look back upon the many circumstances that had occurred during the past year marking the growth of public sympathy with the objects of the Society. In

the first place, there was the large sum placed at their disposal for promoting a conference on the subject of capital and labour, and especially of the remuneration of labour. Then came the Jubilee Meeting, and the amount of public sympathy shown on that occasion towards the Society must have been most gratifying to the President, as it was to all the members of the Council and the Fellows of the Society. Then they had seen that, as Dr. Guy thought of them in life, so he determined that his warm interest in their welfare as a Society should be shown even after the termination of that life. The fact that all these circumstances should have occurred as marks of public sympathy in the objects and investigations of the Statistical Society, must have been most agreeable to their President during this year of his holding office, and he was sure that the members would all unite in according to him their hearty thanks for his excellent address.

The resolution was carried by acclamation.

The PRESIDENT, in responding, said he could assure the members of his continued interest in the welfare and advance of the Society. He hoped that the jubilee year would not be an unfruitful one. It had already created one very important kindred society, the International Institute, and he had no doubt that each would help the other to promote the study of and acquaintance with statistical knowledge.

"Economic Science *and* Statistics." *The* Address *of the* President *of* Section F *of the* British Association, *at the* Fifty-Fifth Meeting, *held at* Aberdeen, *in* September, 1885. *By* Professor Henry Sidgwick, M.A., Litt. D.

I have chosen for the subject of the discourse, which by custom has to be delivered from the chair that I am called upon to occupy, the scope and method of economic science, and its relation to other departments of what is vaguely called "social science." If the abstract and academic nature of the subject, together with my own deficiencies as an expositor, should render my remarks less interesting to the audience than they have a right to expect, I trust that they will give me what indulgence they can; but, above all, that they will not anticipate a corresponding remoteness from concrete fact in the discussions that are to follow. I see from the records of the Association that it has been the custom in this department—and it seems to me a good custom—to give to the annual addresses of the presidents the variety that naturally results when each speaker in turn applies himself unreservedly to that aspect of our complex and many sided inquiry which his special studies and opportunities have best qualified him to treat; and as my own connection with economic science has been in the way of studying, criticising, and developing theories, rather than collecting and systematising facts, I have thought that I should at any rate have a greater chance of making a useful contribution to our discussions if I allowed myself to deal with the subject from the point of view that is most familiar to me.

I have the less scruple in adopting this course because I do not think that any who may listen to my remarks are likely to charge me with overrating the value of abstract reasoning on economic subjects, or regarding it as a substitute for an accurate and thorough investigation of facts instead of an indispensable instrument of such investigation. There is indeed a kind of political economy which flourishes in proud independence of facts, and undertakes to settle all practical problems of governmental interference or private philanthropy by simple deduction from one or two general assumptions—of which the chief is the assumption of the universally beneficent and harmonious operation of self-interest well let alone. This kind of political economy is sometimes called "orthodox," though it has the characteristic unusual in orthodox doctrines of being repudiated by the majority

of accredited teachers of the subject. But whether orthodox or not, I must be allowed to disclaim all connection with it; the more completely this survival of the *à priori* politics of the eighteenth century can be banished to the remotest available planet, the better it will be, in my opinion, for the progress of economic science. Since, however, this kind of political economy is still somewhat current in the market place, since the language of newspapers and public speakers still keeps up the impression that the professor of political economy is continually laying down laws which practical people are continually violating, it seems worth while to try to make clear the relation between the economic science which we are concerned to study and the principles of governmental interference—or rather non interference—which are thought to have been of late so persistently and in some cases so successfully outraged.

It must be admitted at once that there is considerable excuse for the popular misapprehension just mentioned; since for more than a century the general interest taken in the analysis of the phenomena of industry has been mainly due to the connection of this analysis with a political movement towards greater industrial freedom. No researches into the historical development of economic studies before Adam Smith can displace the great Scotchman from his position as the founder of modern political economy considered as an independent science, with a well marked field of investigation and a definite and peculiar method of reasoning. And no doubt the element of Adam Smith's treatise which makes the most impression on the ordinary reader is his forcible advocacy of the "system of natural liberty;" his exposition of the natural "division of labour"—tending, if left alone, to become an international division of employments—as the main cause of the "universal opulence" of "well governed" societies; and of the manner in which, in this distribution of employments, individual capitalists seeking their own advantage are led "by an invisible hand" to "prefer that employment of their capital which is most "advantageous to society."

At the same time Adam Smith was too cool and two shrewd an observer of facts to be carried, even by the force and persuasiveness of his own arguments, into a sweeping and unqualified assertion of the universality of the tendency that he describes. His advocacy of natural liberty in no way blinds him to the perpetual and complex opposition and conflict of economic interests involved in the unfettered efforts of individuals to get rich. He even goes the length of saying that "the interest of the dealers "in any particular branch of trade or manufacture is always in "some respects different from, and even opposite to, that of the

"public." To take a particular case, he is decidedly of opinion that the natural liberty of bankers to issue notes may reasonably be restrained by the laws of the freest governments. He is quite aware, again, that the absence of governmental interference does not necessarily imply a state of free competition, since the self-interest of individuals may lead them, on the contrary, to restrict competition by "voluntary associations and agreements." He does not doubt that governments, central or local, may find various ways of employing wealth—of which elementary education is one of the most important—which will be even economically advantageous to society, though they could not be remuneratively undertaken by individual capitalists. In short, however fascinating the picture that Adam Smith presents to us of the continual and complex play of individual interests constituting and regulating the vast fabric of social industry, the summary conclusion drawn by some of his disciples that the social production of wealth will always be best promoted by leaving it altogether alone, that the only petition which industry should make to Government is the petition of Diogenes to Alexander that he would cease to stand between him and the sunshine, and that statesmen are therefore relieved of the necessity of examining carefully the grounds for industrial intervention in any particular case—this comfortable and labour-saving conclusion finds no support in a fair survey of Adam Smith's reasonings, though it has been no doubt encouraged by some of his phrases. To attribute to him a dogmatic theory of the natural right of the individual to absolute industrial independence—as some recent German writers are disposed to do*—is to construct the history of economic doctrines from one's inner consciousness.

It is true, as I have said, that among Adam Smith's disciples there were not a few who rushed to the sweeping generalisations that the master had avoided. In England, in particular, the influence of the more abstract and purely deductive method of Ricardo tended in this direction. It was natural, again, that in the heat of a political movement absolute and unqualified statements of principle should come into vogue, since the ease and simplicity with which they can be enunciated and apprehended makes them more effective instruments of popular agitation: hence it is not surprising to find the anti-corn-law petitions declaring the "inalienable right of every man freely to exchange the result of his "labour for the productions of other people," to be "one of the "principles of eternal justice." But under the more philosophic guidance of J. S. Mill, English political economy shook off all

* *E.g.*, v. Scheel, in Schönberg's "Handbuch der politischen Oekonomie," p. 89, speaks of "Die naturrechtliche Wirthschaftstheorie oder der Smithianismus."

connection with these antiquated metaphysics, and during the last generation has been generally united with a view of political principles more balanced, qualified, and empirical, and therefore more in harmony with the general tendencies of modern scientific thought.

If, indeed, *laisser-faire* were—as many suppose—the one main doctrine of modern political economy, there can be no doubt that the decisive step forward that founded the science ought to be attributed not to Adam Smith, but to his French predecessors the "Physiocrats." It is to them—to Quesnay, De Gournay, De la Rivière, Turgot—that the credit, whatever it may be, is due of having first proclaimed to the world with the utmost generality and without qualification that what a statesman had to do was not to make laws for industry, but merely to ascertain and protect from encroachment the simple, eternal, and immutable laws of nature, under which the production of wealth would regulate itself in the best possible way if men would abstain from meddling.

This doctrine formed one part of the impetuous movement of thought against the existing political order which characterised French speculation during the forty years that preceded the great revolution. It was, we may say, the counterpart and complement of the doctrine of which Rousseau was the chief prophet. The sect of the économistes and the disciples of Rousseau were agreed that the existing political system needed radical change; and in both there was a tendency to believe that an ideal political order could at once be constituted. At this point, however, their courses diverged; the school of Rousseau held that the essential thing was to alter the *structure* of government, and to keep legislation effectually in the hands of the sovereign people; the économistes thought that the all-important point was to limit the *functions* of government, holding that the simple duty of maintaining the natural rights of the individual to liberty and property could be best performed by an absolute monarch. Both movements had much justification; both have had effects on the political and social life of Europe of which it is difficult to measure the extent; but both doctrines—attained, as they were, by a fallacious method—involved a large element of exaggeration, suitable to the ardent and sanguine period that brought them forth, but which gives them a curious air of absurdity when they are resuscitated and offered for the acceptance of our more sober, circumspect, and empirically-minded age. In the most civilised countries of Europe it is now a recognised and established safeguard against oppressive laws that an effective control over legislation is vested in the people at large; but no serious thinker would now maintain with Rousseau that the predominance of the will of the sovereign people has a necessary

tendency to produce just legislation. Similarly, the doctrine of the Physiocrats has prevailed, in the main, as regards the internal conditions of national industry in modern civilised societies. The old hampering privileges, restraints, and prohibitions have been almost entirely swept away, to the great advantage of the community; but the absolute right of the individual to unlimited industrial freedom is now only maintained by a scanty and dwindling handful of doctrinaires, whom the progress of economic science has left stranded on the crude generalisations of an earlier period.

There will probably always be considerable disagreement in details among competent persons as to the propriety of governmental interference in particular cases; but, apart from questions on which economic considerations must yield to political, moral, or social reasons of greater importance, it is an anachronism not to recognise fully and frankly the existence of cases in which the industrial intervention of Government is desirable, even with a view to the most economical production of wealth. Hence, I conceive, the present business of economic theory in this department is to give a systematic and carefully reasoned exposition of these cases, which, until the constitution of human nature and society are fundamentally altered, must always be regarded as exceptions to a general rule of non interference. The statesman's decision on any particular case it does not belong to abstract theory to give; this can only be rationally arrived at after a careful examination of the special conditions of each practical problem at the particular time and place at which it presents itself. But abstract reasoning may supply a systematic view of the general occasions for governmental interference, the different possible modes of such interference, and the general reasons for and against each of them, which may aid practical men both in finding and in estimating the decisive considerations in particular cases. Thus it may show, on the one hand, under what circumstances the inevitable drawbacks of governmental management are likely to be least, and by what methods they may be minimised; and where, on the other hand, private enterprise is likely to fail in supplying a social need—as where an undertaking socially useful is likely for various reasons to be unremunerative to the undertakers—or where private interests are liable to be markedly opposed to those of the public, as is generally the case with businesses that tend to become monopolies.

It would be tedious now to dwell at more length on these generalities; but there is one special exception to the triumph of the system of natural liberty in the civilised countries of Europe which has too much historical importance to be passed over without

a word in this connection. As we are all aware, this triumph has only been decided as regards the *internal* conditions of industry and trade; the practice of imposing barriers on *international* exchange, with a view to the protection of native industry, still flourishes in the most advanced communities, and shows no immediate tendency to come to an end. It is not, I conceive, reasonable to attribute this result entirely, as some free-traders are disposed to do, to the incapacity of mankind to understand elementary economic truths, and the interested efforts of a combination of producers to prey in a comfortable and legal way on the resources of the confiding consumers. I do not deny that both these causes have operated; but in view of the evident ability and disinterestedness of many of the writers and statesmen who have supported the cause of protection on the continent or in the United States, I cannot find in them an adequate explanation of the phenomenon.

A part of the required explanation is, I think, suggested when we examine the arguments by which free trade was actually recommended to intelligent Englishmen at the time when England's policy was taking the decisive turn in the direction, and imagine their effect on the mind of an intelligent foreigner. Suppose, for instance, that the intelligent foreigner is studying the "Edinburgh "Review" in 1841, when it came forward as a vigorous and decided advocate of free trade. In the January number he would find the cosmopolitan and abstract argument with which we are so familiar; he would learn how, under free trade, "every country "will exert itself in the way that is most beneficial in the "production of wealth;" how labour and capital will be employed in each country to produce those things which the varieties of climate, situation, and soil enable it to produce with greater advantage than other countries, so that "the greatest "possible amount of industry will be kept constantly in action, and "all commodities will exist in the greatest abundance." But in the July number of the same organ he would find a recommendation of free trade from a national point of view, which, though more restricted in its scope, would appear to contain matter no less important for practical consideration. He would find that the immediate introduction of free trade was held to be essential in order to keep what remained of the manufacturing and commercial supremacy of England. He would learn that "the early progress "of any nation that attempts to rival us in manufactures must "be slow;" for "it has to contend with our great capital, our "traditionary skill, our almost infinite division of labour, our long-"established perseverance, energy, and enterprise, our knowledge "of markets, and with the habits of those who have been bred up "to be our customers." He would learn that there was "no reason

"to believe that," in the "absence of disturbing causes," we should ever lose our present command of the world's market; that we might have preserved our superiority for centuries; but that "if these difficulties were once surmounted, this superiority—so "far at least as respects the commodity in which we find ourselves "undersold—would be gone for ever," in consequence of "the "well known law of manufacturing industry that, *ceteris paribus*, "with every increase of the quantity produced, the relative cost "of production is diminished." It cannot be denied that a consideration of this law, and of the *vis inertiæ* here attributed to an established superiority in manufactures and commerce, supplies an important qualification of the general argument for free trade. For, along with the tendency of industry to go where it can be most economically carried on, we have also to recognise a tendency for it to stay and develop where it has been once planted; and the advantage of leaving this latter tendency undisturbed would naturally be less clear to the patriotic foreigner than to the patriotic Englishman. The proclamation of a free race for all, just when England had a start which she might probably keep "for centuries," would not seem to him a manifest realisation of eternal justice; to delay the race for a generation or two, and meanwhile to apply judiciously "disturbing causes," in the form of protective duties, would seem likely to secure a fairer start for other nations, and ultimately, therefore, a better organisation of the world's industry even from a cosmopolitan point of view.

Nor would it seem to him a conclusive argument against this course that protective duties impose great present pecuniary sacrifices on the protecting nation; especially when he learnt, from an impartial English source, of the great sacrifices which private capitalists in England were in the habit of making to assist the tendency of free competition in their favour. He would find, for instance, in the report of a commission published in 1854,* an appeal to the working classes to consider "the immense losses "which their employers voluntarily incur in bad times, in order to "destroy foreign competition, and to gain and keep possession of "foreign markets." Should the efforts of trade unionists, urges the writer, be successful for any length of time, they would interfere with the "great accumulations of capital which enable a few of "the most wealthy capitalists to overwhelm all foreign competition "in times of great depression," and which thus constitute "the "great instruments of warfare against the competing capital of "foreign countries." If it was the view of shrewd English men

* See p. 20 of Report by Mr. H. S. Tremenheere, commissioner appointed to inquire into the operation of Act 5 and 6 Vict., cap. 99, and into the state of the population in the mining districts (vol. xix of Parl. Papers for 1854).

of business that these great sacrifices of private wealth were needed, and were worth making, to maintain the industrial start once gained, the intelligent foreigner would naturally conclude that the other combatants in the industrial battle must be prepared to make corresponding sacrifices; that each nation must fight with its own weapons; and that where there were no great accumulations of capital in private hands, the instruments of warfare must be obtained by a general contribution.

I have given these considerations, not because I agree with the practical conclusion which they tend to support, but because I think that they require to be met by a line of argument different from that which English economists have usually adopted. I think it erroneous to maintain, on the ordinary economic grounds, that temporary protection must always be detrimental to the protecting country, even if it were carried out by a perfectly wise and strong Government, able to resist all influences of sinister and sectarian interests, and to act solely for the good of the nation. The decisive argument against it is rather the political consideration that no actual Government is competent for this difficult and delicate task; that protection, as actually applied under the play of political forces, is sure to foster many weak industries that have no chance of living without artificial support, and to hamper industries that might thrive independently by the artificial dearness of some of their materials and instruments; so that it turns out a dangerous and clumsy, as well as a costly, instrument of industrial competition, and is not likely, on the whole, to bring the desired victory, though it may give a partial success here and there. And some such conclusion as this is, I think, now prevalent even among those German economists who are most decided in their rejection of the claims of *laisser-faire* to absolute and unqualified validity.

So far I have been speaking of the function of economic science in determining principles of governmental intervention in matters of industry, because this is the function prominent in the popular view of political economy. But I need hardly say to the present audience that this is not the view that English economists generally have taken as to their primary business. Indeed, during the last generation our leading economists—even those who come nearest to the so-called "orthodox" type—have gone even further than I should myself go in declaring that economic science had nothing to do with the doctrine of *laisser-faire.* No one (*e.g.*) has stated this more strongly than Cairnes, whom I select as a conspicuous and effective advocate of free trade. "The maxim of "*laissez-faire*," he says, "has no scientific basis whatever;" it is a "mere handy rule of practice," though "a rule in the main sound." According to this view, the "laws" with which economic science

is primarily concerned are the laws that would determine economic quantities—the amount of the aggregate of wealth, its annual increase, the relative values of its different elements, and the shares of the economic classes that have combined to produce it—as they would be apart from special governmental interference, and not the rules for deciding when and how far such interference is justifiable.

And it is the additional light that Adam Smith threw on the general determination of such economic quantities—and not his advocacy of natural liberty—which in the view of economists constitutes his chief claim to his place in the historical development of economic science. And I may observe that, from this point of view, the important predecessors of Adam Smith are not the physiocrats only, but even more Cantillon, who wrote a generation earlier, to whom Jevons drew attention some years ago in a remarkable essay, and—if I may go back to the seventeenth century—Sir W. Petty, who has a special interest for us as a pioneer in each of the two lines of investigation of which I trust this section so long as it exists will always maintain the union, since he was the first in England to combine a serious effort to establish the general relations of economic quantities by abstract reasoning and analysis with patient endeavours to ascertain particular economic facts by statistical inquiries. When we trace the gradual evolution of the modern economic view as to the manner in which the play of individual self interests tends to determine prices and shares—from the rude beginnings of Petty and Locke, through the more systematic and penetrating theory of Cantillon, the fuller analysis and exposition of Adam Smith, and the closer reasoning of Ricardo, down to the important rectifications and additions of Jevons—we see clearly that the progress of the theory has no necessary connection with any doctrine as to the limits of the industrial intervention of Government.

And it is to be observed that neither Adam Smith nor the predecessors to whom I have referred had any idea of suggesting that the distribution which they were endeavouring to analyse satisfied either the claims of ideal equity by giving each individual his deserts, or the claims of expediency by giving him what was most conducive to general happiness. Nor, since Adam Smith, has any leading English economist maintained the former of these propositions; and so far as the school of Ricardo may have seemed to maintain the latter—so far as they certainly have taught that direct governmental interference with distribution was undesirable—it has not been from any prevalence among them of the shallow optimism of Bastiat and his followers. It is pessimism rather than optimism which is to be laid to their charge; not a disposition to

underrate or ignore the hardships that the "natural" rate of wages might entail; but a conviction that, however bad things might be naturally, the direct interference of Government could only make them worse. I am not arguing that they did not go too far in this view; I am now chiefly desirous to remove a profound and widespread misunderstanding as to the general aim and drift of their investigations, which I find in certain German and other continental critics of English political economy, and, I may add, in certain English critics who repeat the foreign objections. Such critics either fail to see, or continually forget, that the English economist, in giving an explanation of the manner in which prices, wages, profits, &c., are determined, is not attempting to justify the result; he is not trying to show that in getting the market price of his services the labourer, capitalist, or landlord gets what he deserves. Thus when Senior called interest the "reward of abstinence," he did not mean to imply that it was normally proportioned to the capitalist's merit in abstaining, but merely that capital is increased by individuals saving instead of spending, and that they require the inducement given by the actual rate of interest to save to the extent to which they actually are saving. Whether any other rate of interest would be *juster* is a question of ideal politics to which the English economist has usually nothing to say so long as it is stated in this abstract form; it is only when the political idealist descends to practice, and proposes a scheme for realising his conception of justice, that it comes within the province of his science to discuss the probable effects of this scheme on production and distribution. But it is not with such hypothetical problems that the English economist conceives himself to be mainly concerned; his primary business is to ascertain the causes which determine actual prices of products and services.

Hence, when the most recent German school of economists—variously known as the "historical," "ethical," or "social" school—claims to have moralised political economy by throwing over the assumption of egoism, which they regard as characteristic of "Smithianismus," they usually appear to the English economist to confound what is with what ought to be. The assumption that egoism ought to be universal—that the universal prevalence of self interest leads necessarily to the best possible economic order—has never been made by leading English writers; and it is an assumption with which they generally conceive themselves in no way concerned—in that part, at least, of the science which deals with distribution. It is the actual prevalence of self interest in ordinary exchanges of products and services which constitutes their fundamental assumption.

But I admit that this reply does not end the controversy. The

critic may rejoin that, if egoism is not what it ought to be, the tranquil way in which the economist treats it as universally predominant is objectionable, as tending to give dangerous encouragement to the baser side of human nature. And, secondly, he may deny that self interest actually has any such predominance as English economists assume; hence, he may argue, their fundamental assumption must lead to serious errors in the analysis and forecast of actual facts.

The first of these points I should concede to some extent. If we regarded it as blameworthy that a man should, under ordinary circumstances, try to get the highest price for any commodity he sells, and give the lowest for what he buys, then, though the analysis of economic facts, as they exist in the present selfish and wicked world, might still be conducted on the present method, I certainly think its results ought to be—and would be—expounded in a different tone. I should say, therefore, that our economists generally do not hold to be censurable, in a broad and general way, the self regard which they assume as normal. I conceive, however, that this view is commonly held with the following important qualifications.

Firstly, it is not implied that the right of free exchange ought not to be legally limited in respect of certain special commodities. Thus, when it is urged by statesmen or philanthropists that the sale of opium, or brandy, or lottery tickets, or children's labour ought to be prohibited or placed under certain restrictions, the political economist, as such, is not to be regarded as holding a brief on the other side—at most he only throws the *onus probandi* on those who advocate interference, adding perhaps a warning that the consequences of their measure may possibly be different from what they anticipate, owing to the play of ordinary self regard working under the new conditions that they aim at imposing.

Secondly, it is not implied that similar limitations may not be effectively imposed by the force of moral opinion. It has, indeed, to be pointed out that morality, like law, may produce effects other than what are designed—*e.g.*, that the discredit attaching to usury may cause the unhappy debtor to pay more instead of less for his inevitable loan, since the usurer has to be compensated for the social drawbacks of his despised employment. But it does not follow that there are no cases in which this disadvantage has to be faced as the least of two evils.

Thirdly, the economist does not assume that his economic man is *always* buying in the cheapest and selling in the dearest market, and never rendering services to his fellow creatures on any other terms. He does not lay down that the economic distribution which it is his business to analyse will not be supplemented to an indefinite

extent by a distribution prompted by other motives: indeed, it should be noted that the ordinary economic man is always understood to be busily providing for a wife and children; so that his dominant motive to industry is rather domestic interest than self interest, strictly so called. And it has never been supposed that outside his private business—or even in connection with it if occasion arises—a man will not spend labour and money for public objects, and give freely gratuitous services to friends, benefactors, and persons in special need or distress.

The political economists, it is true, have often felt called upon to criticise the proceedings of philanthropists; but those who have assumed in enunciating these criticisms a grave air of giving the results of abstruse scientific reasoning are partly to blame, I think, for having drawn on political economy a kind of odium which ought to have been thrown on the broader back of plain common sense. We may say, indeed, with special force of a great part of economic science what Huxley has said of science generally—that it is only "organised common sense." But it needs little organisation to show that the motives to industry and thrift are impaired by the indiscriminate relief of the idle and improvident; that you help men best by encouraging them to help themselves, by widening the opportunities for the display of energetic activity and enterprise, and diffusing the knowledge that will save it from being wasted, rather than by diminishing the inducements that stimulate it. To apprehend the truth of propositions like these, a man need not even have read a shilling handbook; and yet these commonplaces constitute the greater part of the "hard hearted economist's" criticism of sentimental philanthropy. If, indeed, the economist has gone on to say that therefore no efforts ought to be made to relieve distress, and raise those who have temporarily stumbled in the struggle for existence, or if he has prophesied failure to all larger attempts on the part of philanthropists to improve the condition of the classes at the base of the industrial pyramid—if, I say, an individual economist has here and there been found lecturing and prognosticating in this sweeping manner, he has only exemplified the common human tendency to dogmatise beyond the limits of his knowledge; and I trust the blame will not be laid on the science whose exacter methods he has deserted or misapplied.

The important question of method, then, at issue between the English economists and their German critics is not whether the play of the ordinary motives of self interest ought to be limited and supplemented by the operation of other motives, but whether these other motives actually do, or can reasonably be expected to, operate in such a way as to destroy the general applicability of the method of economic analysis which assumes that each party to any free

exchange will prefer his own interest to that of the other party. And in speaking of the German historical school as antagonists on this question, I ought to say that I refer only to what I may call their more aggressive left wing. With the more moderate claims of the historical method as set forth by the distinguished leader of the school, William Roscher, the English economists, who maintain the tradition of Adam Smith and Ricardo, have no sort of quarrel; and Roscher expressly disclaims any quarrel with them. He has sought, as he says, "gratefully to avail himself" of the results of Ricardian analysis, and we can no less gratefully profit by the abundant historical researches that he has led and stimulated. It is no doubt true that our older economists often had an insufficient appreciation of the historical variations in economic conditions; and, in particular, did not adequately recognise the greater extent to which competition was limited or repressed by law or custom in states of society economically less advanced than our own. But for a generation there has been no serious dispute about this, nor has there ever been any fundamental disagreement between Ricardians and Roscherians as to the right method of studying the history of economic facts. The most deductive English economist has never gone so far as to maintain that this can be constructed *à priori*, any more than any other history; and if a generation ago he was sometimes wont to dogmatise with insufficient information as to the causes of industrial changes and the economic effects of political measures in other ages and countries, he has grown wiser, like other persons, through the great development of historical study—and of what I may call the common historic sense of educated persons—which has taken place in the interval. Indeed, I think the danger now is rather that we should go into the opposite extreme, and not give sufficient attention to the more latent and complicated but very effective manner in which competition is found operating even in states of society where the barriers of custom are strongest.

But further, even as regards the present condition of industry in the more advanced countries, to which the theory of modern economic science primarily relates, there is, I conceive, no dispute as to the need of what is called a "realistic" or "inductive" method—*i.e.*, as to the need of accurately ascertaining particular facts when we are inquiring into the particular causes of particular values, or of the shares of particular economic classes at any given place and time. All that the deductive reasonings of English economists supply is a method of analysing the phenomena and a statement of the general causes that govern them, and of the manner of their operation. In this analysis, no doubt, the assumption is fundamental that the individuals concerned in the actual

determination of the economic quantities resulting from free exchange will aim, *ceteris paribus*, at getting the most they can for what they sell and giving the least they can for what they buy. And when we find the legitimacy of this assumption, and the scientific value of the analysis based upon it, broadly assailed by Hildebrand,* Knies,† and others, we are no doubt seriously concerned to meet their criticism.

For my own part, I can only say that, having searched their works with the interest and respect which are due to the indefatigable research and the scientific fertility of the German intellect, I am quite unable to discover what other scientific treatment of the general theory of distribution and exchange they propose to substitute for the treatment which they sweepingly criticise. I cannot perceive that their higher view of man as a moral, sympathetic, public spirited being, habitually rising above the sordid huckstering considerations by which English economists assume him to be governed, has any material effect on their theory of the determination of economic quantities when it comes to be actually worked out. When Knies,‡ for instance, is discussing the nature and functions of capital, money, and credit, or when he is arguing with more subtlety than success against the Ricardian doctrine of rent, we find that the capitalists and landlords, the lenders and borrowers, whose operations are contemplated, exhibit throughout the familiar features of the old economic man. So again when, in the "Encyclo-" pædia of Political Economy,"§ recently published by this school, we examine the definitions of fundamental notions, or the explanation of prices, or the theory of distribution, we meet, indeed, with some interesting variations on the old doctrines, but we find everywhere the old economic motives assumed and the old method unhesitatingly applied. The proof of the pudding, as the proverb says, is in the eating; but our historical friends make no attempt to set before us the new economic pudding which their large phrases seemed to promise. It is only the old pudding with a little more ethical sauce and a little more garnish of historical illustrations.

In saying this I should be sorry to seem to underrate the debt that economic science owes to the labours of the school now dominant in Germany. Much of the positive work that they have

* See two papers on "Die gegenwärtige Aufgabe der Wissenschaft der poli-" tischen Oekonomie," in the first volume (1863) of Hildebrand's "Jahrbuch für " National-Oekonomie u. Statistik," p. 5ff. and p. 137ff.: especially his criticism of J. S. Mill (p. 23), quoted with approval by Schönberg in the introduction to his " Handbuch."

† See his "Politische Oekonomie vom geschichtlichen Standpunkte," iii, § 3.

‡ See his "Geld und Credit," in particular "Credit," part 2, chap. xii, § 2.

§ See Schönberg's "Handbuch," iv, v, and xi.

produced is in its way excellent; even their criticism of the older method has been, in my opinion, most useful; and if I complain that they have by no means done what they announced, with some flourish of trumpets, that they were going to do, it is chiefly because their exaggerated phrases have led critics of a looser sort to misunderstand and misrepresent the recent progress and actual condition of economic thought. I fully recognise that the elaborate and careful study of economic facts in all departments, which the historical school has encouraged and carried out, is an indispensable aid to the due development of general economic theory. In all abstract economic reasoning which aims at quantitative precision, there is necessarily a hypothetical element; the facts to which the reasonings relate are not contemplated in their actual complexity, but in an artificially simplified form; if, therefore, the reasoning is not accompanied and checked by a careful study of facts, the required simplification may easily go too far or be inappropriate in kind, so that the hypothetical element of the reasoning is increased to an extent which prevents it from having any practical value. And this danger is of course enhanced by the great, though generally gradual, changes in economic facts which accompany or constitute industrial development. Thus, for instance, a theoretical investigation of the purchasing power of money, which assumes for simplicity that coin or bank notes form the sole medium of exchange, might easily lead to serious practical errors in the existing condition of industry; and a theory of capital which ignores the great and growing preponderance of auxiliary over remuneratory capital is liable to be similarly delusive. The general study of economic history is important as calling attention to this source of error; but for effective protection against it we must look to that patient and systematic development of statistical inquiry, which it is one of our main functions here to watch and to foster.

I must observe, however, that the historical economists are apt to insist too one-sidedly on the progress in economic theory attained by studying the industrial organisation of society in different stages of its development; they do not sufficiently recognise that other kind of progress which consists in conceiving more clearly, accurately, and consistently the fundamental facts that remain without material change. But this latter kind of progress is very palpable to one who traces back the history of economic doctrines. Indeed, if our active controversy on principles and method has led anyone to think that political economists are always wrangling and never establishing anything, he may easily correct this impression by turning to the older writers, and noting the confusions they make on points that are now clear to all instructed persons, and the inferences they unhesitatingly draw, which all would now admit to be in whole or

in part erroneous. And by the "older writers" I do not mean merely those who lived before Adam Smith; what I have just said is no less true of the "Wealth of Nations" and its most distinguished successors. A tyro can now see the fallacy of Adam Smith's statement, that "labour never varying in its own value" is a "universal" and "accurate standard of the exchangeable "value of all commodities at all times and places;" the staunchest Ricardian would refuse to follow his master in maintaining that a tax on corn would cause labourers "no other inconvenience than "that which they would suffer from any other mode of taxation;" the most faithful disciple of J. S. Mill would not fall into the confusion between "interest" and "profit" which seriously impairs the value of important parts of his discussions. Much progress, I doubt not, still remains to be made, by steadily continuing that labour of reflective analysis through which our conception of fundamental economic facts has grown continually fuller and more exact; but no one who examines impartially the writings of our most eminent predecessors can ignore the progress that has already been made.

I now pass to consider another old charge against political economists, which has been recently revived: the charge of confining their attention too much to the special group of phenomena with which they are primarily concerned, and neglecting the relations of these to other social facts. There have, no doubt, been writers—Senior is perhaps the most important—in whom such neglect was deliberate and systematic, but their peculiar view of economic method has long ceased to have any influence on current thought; and I hardly think that political economists are now more open to the charge of systematic narrowness than any other set of students who do not "take all knowledge for their province," but accept the limitations which the present state of research imposes as the inevitable condition of thorough work in any department. And so far as the charge hits a real defect, I doubt whether vague generalities about the "consensus of the different functions of the "social organism," and the impossibility of "isolating the study of "one organ from that of the rest," will be found of much practical use in correcting the defect; since the relations of other social phenomena to those which primarily concern the economist vary indefinitely in closeness and importance; so that the question how far it is needful to investigate them is one which has to be answered very differently in relation to different economic inquiries. Thus, in considering generally the first subject of Adam Smith's investigation—"the causes of the improvement in the productive "powers of labour"—the importance of a healthy condition of social morality must not be overlooked; but it is not therefore the econo-

mist's duty to study in detail the doctrine or discipline of the different Christian churches; while any reference he may make to the history of the fine arts will obviously be still more remote and brief. If, however, we are considering historically the causes that have affected the interest of capital, the views of Christian theologians with regard to usury will require careful attention; if, again, we are investigating the share taken by a particular community in the international organisation of industry, the higher average of artistic sensibility among its members may be a consideration deserving of notice—as in the case of France.

Or again, we may illustrate the different degrees of connection of economic science with different departments of social fact by comparing the chief classes of statistics with which this section has concerned itself. Some of the most important of these—such as the statistics of taxation, trade, railways, land tenure and the like, and a great part of the statistics of population—obviously supply the indispensable premises of much of the economist's reasoning, so far as it aims at being precise and particular, and the indispensable verification of many of his conclusions. In other cases again, as, for instance, the great departments of sanitary and educational statistics, the interest of the economist is more general and limited: for though both sanitation and education have important bearings on the productiveness of national labour, the details of the organisation for promoting either end lie in the main beyond the scope of his investigation; while he has manifestly still less to do with criminal statistics, military and naval statistics, and several other species of social facts which governmental or private agencies now enable us to ascertain with approximate quantitative exactness.

At this point, however, our critics will probably say that it is not so much a knowledge of the separate relations of different groups of social phenomena that the political economist lacks, but rather a true conception of the social organism as a whole, and of the fundamental laws of its development; he does not recognise that his study can only be legitimately or profitably pursued as a duly subordinated branch of the general science of sociology. This view was strongly urged by Mr. Ingram in his presidential address to this section seven years ago in Dublin;* and it was enforced by pointing contemptuously to the limited function which well instructed economists at the present day are careful to allot to their science in the settlement of practical questions. When we explain, with Cairnes, that political economy furnishes certain data that go towards the formation of a sound opinion on such questions, but does not undertake to pronounce a final judgment on them, we are

* It has been recently expressed again, with no less emphasis, in Mr. Ingram's article on "Political Economy," in the nineteenth volume of the "Encyclopædia Britannica."

told that this "systematic indifferentism amounts to an entire "paralysis of political economy as a social power;" and that the time has come for it to make way for, or be absorbed into, the "scientific sociology" which is now in the field, and certainly seems ready to offer statesmen the unhesitating and comprehensive practical guidance to which mere economic science confesses itself inadequate.

It appears to me that Mr. Ingram and his friends somewhat mistake the point that they have to prove. It is not necessary to show that if we could ascertain from the past history of human society the fundamental laws of social evolution as a whole, so that we could accurately forecast the main features of the future state with which our present social world is pregnant—it is not needful, I say, to show that the science which gave this foresight would be of the highest value to a statesman, and would absorb or dominate our present political economy. What has to be proved is that this supremely important knowledge is within our grasp; that the sociology which professes this prevision is really an established science. To deny this may perhaps seem presumptuous, in view of the voluminous works that we possess on the subject, which it would be quite out of place for me to attempt to criticise methodically on the present occasion. Fortunately, however, such methodical criticism is not required to justify my negative conclusion: since there are two simple tests of the real establishment of a science—emphatically recognised by Comte in his discussion of this very subject—which can be quickly and decisively applied to the claims of existing sociology. These tests may be characterised as (1) Consensus or Continuity and (2) Prevision. The former I will explain in Comte's own words: "When we find "that recent works, instead of being the result and development of "what has gone before, have a character as personal as that of "their authors, and bring the most fundamental ideas into "question"—then, says Comte, we may be sure we are not dealing with any doctrine deserving the name of positive science. Now, if we compare the most elaborate and ambitious treatises on sociology—of which there happens to be one in each of the three leading scientific languages—Comte's "Politique Positive," Spencer's "Sociology," and Schäffle's "Bau und Leben des "socialen Körpers"—we see at once that they exhibit the most complete and conspicuous absence of agreement or continuity in their treatment of the fundamental questions of social evolution.

Take, for example, the question of the future of religion. No thoughtful person can overlook the importance of religion as an element of man's social existence; nor do the sociologists to whom I have referred fail to recognise it. But if we inquire after the characteristics of the religion of which their science leads them to

foresee the coming prevalence, they give with nearly equal confidence answers as divergent as can be conceived. Schäffle cannot comprehend that the place of the great Christian Churches can be taken by anything but a purified form of Christianity; Spencer contemplates complacently the reduction of religious thought and sentiment to a perfectly indefinite consciousness of an Unknowable, and the emotion that accompanies this peculiar intellectual exercise; while Comte has no doubt that the whole history of religion—which, as he says, "should resume the entire history of "human development"—has been leading up to the worship of the Great Being, Humanity, personified domestically for each normal male individual by his nearest female relatives. It would certainly seem that the science which allows these discrepancies in its chief expositors must be still in its infancy. And when we go on to ask how these divergent forecasts of the future are scientifically deduced from the study of the past evolution of mankind, we are irresistibly reminded of the old epigram as to the relation of certain theological controversialists to the Bible:

> Hic liber est in quo quærit sua dogmata quisque,
> Invenit et pariter dogmata quisque sua.

I do not doubt that our sociologists are sincere in setting before us their conception of the coming social state as the last term of a series of which the law has been discovered by patient historical study; but when we look closely into their work it becomes only too evident that each philosopher has constructed on the basis of personal feeling and experience his ideal future in which our present social deficiencies are to be remedied; and that the process by which history is arranged in steps pointing towards his Utopia bears not the faintest resemblance to a scientific demonstration.

This is equally evident when we turn from religion to industry, and examine the forecasts of industrial development offered to the statesman in the name of scientific sociology as a substitute for the discarded calculations of the mere economist. With equal confidence, history is represented as leading up, now to the naïve and unqualified individualism of Spencer, now to the carefully guarded and elaborated socialism of Schäffle, now to Comte's dream of securing seven-roomed houses for all working men—with other comforts to correspond—solely by the impressive moral precepts of his philosophic priests. Guidance, truly, is here enough and to spare; but how is the bewildered statesman to select his guidance when his sociological doctors exhibit this portentous disagreement?

Nor is it only that they adopt diametrically opposite conclusions: we find that each adopts his conclusion with the most serene and complete indifference to the line of historical reasoning on which his brother sociologist relies. Schäffle, *e.g.*, appears not

to have the least inkling of the array of facts which have convinced Spencer that the recent movement towards increased industrial intervention of Government in Germany and England is casually connected with the contemporaneous recrudescence of "militancy" in the two countries. And similarly, when Spencer explains how, under a *régime* of private property and free contract there is necessarily a "correct apportioning of reward to merit," so that each worker "obtains as much benefit as his efforts are "equivalent to—no more and no less," he exhibits a total ignorance of the crushing refutation which, according to Schäffle, this individualistic fallacy has received at the hands of socialism. The tendency of free competition to annihilate itself, and give birth to monopolies exercised against the common interest for the private advantage of the monopolists; the crushing inequality of industrial opportunities, which the legal equality and freedom of modern society has no apparent tendency to correct; the impossibility of remunerating by private sale of commodities some most important services to the community; the unforeseen fluctuations of supply and demand which a world-wide organisation of industry brings with it: liable to inflict, to an increasing extent, undeserved economic ruin upon large groups of industrious workers; the waste incident to the competitive system, through profuse and ostentatious advertisements, needless multiplication of middle-men, inevitable non employment, or half employment, of many competitors; the demoralisation, worse than waste, due to the reckless or fraudulent promotion of joint stock companies, and to the gambling rife in the great markets, and tending more and more to spread over the whole area of production—such points as these are unnoticed in the broad view which our English sociologist takes of the modern industrial society gradually emancipating itself from militancy; it never enters his head that they can have anything to do with causing the movement towards socialism to which his German *confrère* has yielded.*

However, whether Spencer or Schäffle is a true prophet—whether the decay of war will bring us to a more complete individualism, or whether the increasing scale of the organisation of industry and its increasingly marked deficiencies are preparing the way for socialism—cannot certainly be known before a date more or less distant. But as Comte's sociological treatise was written a generation ago, we are fortunately able to bring his very definite previsions and counsels to the test of accomplished facts. In 1854 he announced that the transition which was to terminate the western revolution would be organised from Paris, the "religious "metropolis of regenerate humanity," where an "irreversible

* See Schäffle's "Kritik der kapitalistischen Epoche," in "Bau und Leben "des socialen Körpers," vol. iii, pp. 419—457.

"dictatorship" had just been established, within the space of a generation. In the initial phase of the transition, which ought to last about seven years, perfect freedom of the press would "rapidly extinguish journalism," owing to the "inability of the "journal to compete with the placard." By a "judicious use of "placards, with a few occasional pamphlets," Positivism would regenerate public opinion. The budget of the clergy, the University of France, the Academy of Sciences must be suppressed, and the proximate abolition of copyright announced. By these moderate measures Louis Napoleon's irreversible dictatorship might be "perfected and consolidated," so that the dictator might assume complete legislative power, reducing the representative assembly —which would sit once in three years—to the purely financial function of voting the budget. In the second phase of the transition, which should last about five years, the "dictatorial "government now unquestionably progressive," would suppress the French army, substituting a constabulary of 80,000 gendarmes. This would suffice to maintain order, internal and external, as the oppressive military establishments of neighbouring States would everywhere fall as soon as France had put down her army. The dictator would then break up France into seventeen separate intendancies as a step towards the ultimate Positive *régime*, under which the people of Western Europe are to be distributed into seventy republics, comprising about 300,000 families each. The third and last phase of the transition, which should occupy about twenty-one years, might be expected to be opened by the voluntary abdication of the dictator in favour of a triumvirate, consisting probably of a banker to manage foreign affairs, an "agricultural "patrician" as minister of the interior, and a working man to take charge of the finances. Their names would be suggested by the High Priest of Humanity—indeed, Comte tells us that he had been "working for several years at the choice of persons," in order to be ready for this momentous nomination; for the immense influence which positive doctrine ought to have gained by this time would enable the political direction of France to be placed completely in the hands of positivists. This triumvirate would transform the seventeen intendancies into separate republics; the *bourgeoisie* would then be gradually "eliminated" by the extinction of *littérateurs*, lawyers, and small capitalists, so that society would pass easily into the final *régime*.*

I need not go on to this final *régime*. I have already given you more than enough of these extravagances; but it seemed important to show how completely the delusive belief that he had constructed the science of sociology could transform a philosopher of remark-

* These details are taken from Comte's "Système de Politique Positive," vol. iv, chap. v.

able power and insight into the likeness of a crazy charlatan. I trust that our Association will take no step calculated to foster delusions of this kind. There is no reason to despair of the progress of general sociology; but I do not think that its development can be really promoted by shutting our eyes to its present very rudimentary condition. When the general science of society has solved the problems which it has as yet only managed to define more or less clearly—when for positive knowledge it can offer us something better than a mixture of vague and variously applied physiological analogies, imperfectly verified historical generalisations, and unwarranted political predictions—when it has succeeded in establishing on the basis of a really scientific induction its forecasts of social evolution—it will not require any formal admission to the discussions of this section; its existence will be irresistibly felt throughout the range of the more special inquiries into different departments of social fact to which we have hitherto restricted ourselves. It is our business in the meantime to carry on our more limited and empirical studies of society in as scientific a manner as possible. Of the method of statistical investigation I have not presumed to speak, as I have not myself done any work of this kind, but have merely availed myself gratefully of the labours of others. But, even so, it has been impossible for me not to learn that to do this work in its entirety, as it ought to be done, requires faculties of a high order. For duly discerning the various sources of error that impede the quantitative ascertainment of social facts, eliminating such error as far as possible, and allowing for it where it cannot be eliminated—still more for duly analysing differences and fluctuations in the social quantities ascertained, and distinguishing causal from accidental variations and correspondences—there is needed not only industry, patience, accuracy, but a perpetually alert and circumspect activity of the reasoning powers; nor is the statistician completely equipped for his task for discovering empirical laws unless he can effectively use the assistance of an abstract and difficult calculus of probabilities. It is satisfactory to think that there is every prospect of statistical investigations being carried on in an increasingly comprehensive and systematic manner, throughout an ever widening range of civilised countries. The results of this development cannot fail to be important from the statesman's no less than the theorist's point of view; for though the statistician, as such, does not profess to guide public opinion on political questions, there can be no doubt, as Mr. Giffen has recently pointed out, that the knowledge attained by him tends to exercise on the general discussion of such questions an influence, on the whole, no less salutary than profound.

Customs Tariffs. *By* A. E. Bateman, Esq.

[Read before the British Association for the Advancement of Science, at Aberdeen, September, 1885.]

Some apology is perhaps needed for offering a contribution on a subject which has been worn almost threadbare by the writers of the Cobden Club and their opponents the Fair Traders, but as one who does not belong to either of these camps I may be permitted to address you for a short time, rather from the practical than from the theoretical point of view, twenty years' experience in the Board of Trade having brought to my notice many of the incidents of tariff difficulties abroad, which possess considerable interest at the present time.

I would here premise two observations: first, that the contemptuous language which is usually applied by the thorough free trader to his weaker brother the fair trader and his protectionist kinsman is to be deplored, seeing that the objects of abuse form so large a proportion of the world's civilised population; and secondly, that both parties are apt to attach too great importance to the raising or lowering of the tariffs in its effect on trade, and ignore such considerations as perfection in machinery and transport, fertile soil, technical education, and last, but not least, industrious and saving populations.

As regards the trade of the various countries, it is quite impossible to give in this short paper any adequate or even a brief sketch of the figures, which have all to be minutely analysed to be of any use in this discussion. Moreover, Sir Thomas Farrer in his recent edition of "Free Trade *versus* Fair Trade" has treated this part of the subject so exhaustively, that—whatever may be thought of his conclusions, the statistical part of the work can hardly be improved upon in completeness. I have, however, appended a Table (A) giving the very latest figures of trade for France, Italy, the United States, and the United Kingdom, for the first half of the present year, compared with the corresponding half of 1883 and 1884.* Comparing the present year with 1883—the last year of the short revival—French imports and exports have each declined 6 per cent. in value, Italian imports have increased 16 per cent., and exports decreased 25 per cent. United States'

* German returns are not available for this recent period as to values, but the six months' returns of exports show a falling off in quantity of about 10 per cent. in the chief manufactured articles compared with last year.

imports have decreased 20 per cent., and exports 15 per cent.; while the United Kingdom has declined 11 per cent. in both imports and exports. Taking into consideration that values of United Kingdom trade are declared values at present prices, while in most foreign countries, notably France, the values are calculated at the prices of a year or even two years ago, it is evident that in a time of falling prices, our accounts will show a larger falling off than those of foreign countries; although no unprejudiced person who has read the recent debates in the French, Belgian, and German Chambers on new tariff changes and schemes, can doubt that the present depression in trade and agriculture is by no means confined to this country, but is universal, and is to a great extent a depression of value and not quantity.*

I will now glance briefly at the tariff changes of the principal European countries in recent times, taking as my starting point the year 1859, which is twenty-six years, or nearly a generation, back. This date is convenient from being the year before what is known as the Cobden treaty with France was negotiated, and it has been taken in certain tariff returns issued by the Board of Trade in 1879 on Mr. Talbot's motion (House of Commons 200 and 218 of 1879), showing foreign and colonial rates of duty on the chief British articles in 1859 and 1879. These returns, and those issued on Lord Sandon's motion in 1881 (House of Commons 333 of 1881) will repay a careful study, but the information is too detailed to quote here. I have therefore prepared a short statement (Table B) of the duties in the principal countries of Europe and in the United States on five leading British manufactures, which also happen to be the chief articles of import in most of these countries, viz., cotton yarns, cotton tissues, woollen tissues, pig iron, and iron rails. Even in these I have often been unable to show more than a selection for comparison, owing to new and complicated classifications: averages more or less arbitrary have also occasionally been necessary.

Beginning with Russia, it will be seen that the tariff was greatly reduced between 1859 and 1879. Recent increases, including the payment of duties in gold, have brought the rates back rather above the former level. In the last year and a half American and Indian competition in corn has affected the consuming power of the corn producing classes, and from this and other causes the revenue has suffered. Increased duties were put on herrings, wine, and tea in February, 1884, and subsequently the metal producers, who

* As regards France, see especially the Report to the Chamber of Deputies on the industries of Lyons and St. Étienne, and the general report on the State of Agriculture and Industry in France and on the Paris crisis (Nos. 3446 and 2695 of 1884).

were suffering in Russia as elsewhere, obtained a considerable rise on the coal, iron, and machinery rates. Since then there has been a general increase of from 10 to 20 per cent. on almost all articles, not, it is stated, as reprisals for what other countries have done, but "because the exports have fallen off, and it then becomes the "duty of the State to see that imports are reduced proportionately:" ("Journal du Ministère de Finances," quoted in Journal "de St. Pétérsbourg" for June, 1885). The position of Russia is complicated by her dependencies, *e.g.*, Finland, where iron and cotton are supposed to be manufactured more cheaply than in Russia. To correct this inequality, and also to prevent the importation of foreign goods through Finland, duties have lately been imposed in Russia on these articles coming from Finland, and only a limited quantity in the year is allowed to be imported! There is also the difficulty of keeping the central Asian trade from what the "Nouveau Temps" of St. Petersburg calls the *inundation* of British goods, and this Journal states that a customs cordon starting from the mouth of the Atrek is contemplated, which would embrace Turkestan, Boukhara, and Khiva, and find employment for the Cossacks and local military forces.

Turning to the lesser northern countries of Denmark, Sweden, and Norway, the tariffs have been rather reduced than raised in the last twenty-five years, and are comparatively moderate on most articles.

In Germany we find the duties in 1879 much lower than those of twenty years before, but since then a new departure has been taken. In 1879 the tariff was generally raised, and recently cereals and food have been much more heavily taxed, to enable the landed interest to live; in addition, as a compensation to the manufacturer, increased rates on manufactured goods and semi-manufactured goods have been imposed. Germany has however most important compensations in her system of technical education and in cheap railway transport. In Holland, where the tariff has for a long time been a very moderate one, no increases have been made. Belgium has reduced many duties, and a Bill has been before the Chambers quite recently, to make further reductions in yarns and textiles; but owing to there being no time to discuss the measure, it has been postponed till next session. In this connection it is worth notice that a motion for inquiring into agricultural and trade depression was last session rejected by a large majority, the protectionists voting against it as a waste of time, and a proposal to tax corn and meat was also out-voted, but by a smaller majority. In France the tariff is still very much more favourable than before the well known Cobden treaty of 1860, although the substitution of specific for *ad valorem* duties in

1882 taxes cheap cotton prints and woollens rather severely. The difficulty of distinguishing materials from manufactures and of making a *fair* protective tariff is very forcibly shown in the case of France. Cotton yarns pay high duties as competing with Rouen and other manufactures, but they are an important raw material of the Lyons mixed silk industry, and the latter demands in vain an exemption of duty or what is called temporary importation, *i.e.*, the free importation of a material to be afterwards exported in a more finished condition.* The Government have power to add articles to this privileged list, under an Act passed about fifty years ago, but the exercise of these powers provokes much irritation among the interested parties.

In addition to these tariff difficulties the new corn and meat duties have led to reprisals on the part of Roumania as a corn growing country, and in return France has put a duty of 50 per cent. *ad valorem* on Roumanian goods; not, as stated in the French Chamber, "in an unfriendly spirit, but simply treating Roumania "as a younger sister," who, like many other young sisters, requires keeping in her place.

In Italy the tariff, which had been much reduced between 1859 and 1879, has since been raised, but not quite as high as the former rates on the chief articles. Austria-Hungary also shows a great reduction between 1859 and 1879, and an increase since, though not to the old level. The tariff situation of Austria is somewhat complicated by the opposite interests of the Austrian manufacturers and the Hungarian corn growers. I have not alluded to the Spanish or Turkish tariffs, owing to their peculiar position at the present time. In Spain, British goods, even under the existing arrangement, pay less than they did in 1859, and would pay considerably lower duties if the recent arrangement for giving us as good treatment as other European countries had been carried out. In Turkey negotiations for revising the tariff have been going on for some time; the former duty was nominally 8 per cent. *ad valorem*, but many duties being levied specifically, and calculated at prices much higher than those now ruling, amounted to 12 or 15 per cent. in some cases, and a conversion into specific duties at present prices will probably improve the operation of the tariff, if the equivalent *ad valorem* rates are not raised too high. The United States is conspicuous in having raised its duties very considerably between 1859 and 1879. The late Tariff Act of 1883 made some modifications, such as not including packing and transport charges to the port of shipment in the cost on which *ad valorem* duties are calculated, and many changes

* Fine cotton yarns are now in the list, but this is not enough for Lyons.

of classification were also introduced, which reduced the average *ad valorem* rate on dutiable goods from 42 to 40 per cent., but the great wall of protection still awaits the trumpets of some future Joshua! It must however be remembered that the United States with almost every variety of soil, climate, and capacity, is really a most splendid instance of free trade, *malgré lui*, since there are no customs barriers between State and State.

I have in this short sketch mentioned only the tariffs of the chief European countries and the United States, and have omitted the civilised and semi-civilised States of South and Central America, and the great eastern markets of Japan and China. There has been little change, speaking generally, in all these tariffs, the American ones being still very exorbitant, though the State does not succeed in pocketing all that is prescribed by the tariff; in China and Japan moderate duties are still levied.

To say then that the chief markets of the world have of late years been *closed* to our produce savours somewhat of exaggeration, when the foregoing comparison of duties twenty-six years ago and now is considered; although owing to the fall in prices the incidence of unchanged specific duties has become more severe, and for this reason *ad valorem* duties are much to be preferred. Germany and Russia indeed are trying to give increased protection all round without checking cheap manufacture. France has lately revised differential duties in her colonies, not being able to export manufactures there without this assistance; and there is a scramble for Africa amongst European nations with the same object of getting exclusive trading rights; but this evident confession of the difficulty of protecting manufactures without injuring cheap production should not disturb us further than by showing us the importance of keeping the colonial markets in which we have a fair field and no favour. The chief tariff puzzles in front of us are in connection with our colonies and their federation, and as affecting present and future commercial treaties.

In regard to the colonies, I have not encumbered this paper with a comparative statement of tariffs in 1859 and now, but will here shortly review the chief changes that have been effected.

In India 5 per cent. on cotton yarns, and 10 per cent. on other goods, were reduced at various times, and finally abolished in 1879, and duties now are levied only on spirituous liquors, and arms and ammunition, besides that on salt, which is really an excise duty. In Ceylon and Mauritius moderate tariffs of 5 to 7 per cent. *ad valorem* are maintained. In some of the Australian colonies, notably in Victoria and New Zealand, rather high duties have been imposed since 1859, and New South Wales alone can now be

called a free trading colony. Cape of Good Hope levies 15 per cent. *ad valorem* on most articles, chiefly for revenue purposes, instead of half that rate in 1859, and the tendency of the West India Islands is towards higher duties. Canada is however the most striking example of increase, a very elaborate protective tariff having been adopted as a bulwark against United States' importation in 1879. which has been maintained with some modification ever since. This policy is annually challenged on the budget, and speeches bristling with figures prove to their authors' satisfaction that the successes or failures of the various industries are *all* due to the tariff. It is apparent however in Canada, as in the United States, that the fluctuations of trade cannot be prevented by a protective tariff, over production bringing its own punishment everywhere. Thus in Canada the iron and cotton industries are in a state of great depression at the present time, in spite of high customs duties that have been most carefully balanced, so as to protect home manufacture in every possible way.

Taking then the self-governed colonies generally it may be said that their duties are now much higher than in 1859, and the question arises, how can federation be more than a name, if such barriers are to exist between (1) intercolonial trade, (2) trade between the mother country and the colonies. In 1873 the Act 36 Vict., cap. 22, was passed to enable any of the Australian colonies and New Zealand to make a customs union among themselves. Up to the present time no such unions have been formed, but Tasmania and Victoria have lately been in negotiation for a reciprocity treaty. The influence of sentiment on trade is so important that it would be worth while sacrificing a few fine abstract principles of political economy to make a customs union of Great Britain and her colonies, if it could only be practically carried out; but besides the geographical objections to a Zollverein of which many of the component States would be thousands of miles apart with good foreign markets intervening, there would be the tremendous difficulty of reconciling the complicated and conflicting tariffs of the various colonies. Take for instance the Canadian tariff, in which there is a special list of materials for manufacture allowed in free by order in council. Some of these categories are complicated by reservations, that the article is only to be used in manufactures and not for private use *e.g.*, coke; another frequent limitation is that the article should be free only so long as it is not made in Canada. Imagine the complication of an imperial tariff of Great Britain and her colonies, which should contain these provisions, not only for Canadian, but for all the other manufacturing interests of the Empire, with the additional conditions of reciprocity to be applied to every foreign

country! The attempt to distinguish manufactured goods from raw material would alone be a herculean task, since no two people can be found to agree in classifying such important articles as chemicals, leather, iron of many kinds, petroleum, yarns, and printing paper.

Food too must be a great stumbling block, for while fair traders as a rule deny the wish to tax it when it comes in proper season, one or two eminent members of Parliament have declared themselves in favour of a duty on *early* fruit and vegetables, which compete disastrously with home produce. An imperial tariff, differential in time as well as in origin, would indeed be complicated, especially if the "temporary importation" system of drawbacks on the materials of manufacture be appended, as it must probably be, to secure cheapness of manufacture. As an official taking great interest in tariff making, I should rejoice at the task, but the manufacturer here or in the colonies, whose prosperity or even existence might depend on the maintenance of protective duties, would find himself in a dangerous position. From a manufacturer's point of view it would even be preferable to restore the so called registration duty of 1*s.* a quarter on corn imported into this country, or even increase it to 2*s.*, giving differential exemption to colonial produce. Considering the large proportion of fixed charges of manufacture and distribution, to the price of the raw material in bread, the food of the people would probably not be any dearer, while the revenue would benefit. There is a good deal of exaggeration as to the effect of taking off the 1*s.* corn duty in 1869. It has been stated that Liverpool and other ports have owed their increased prosperity to this cause, but looking at the figures of re-exports, we find that the value of foreign and colonial wheat and flour exported from the United Kingdom averaged 170,000*l.* annually in the fifteen years 1855-69, and 514,000*l.* in the last fifteen years, thus showing an increase of 344,000*l.* per annum—not a very important business even if the whole increase is due to the removal of the 1*s.* duty. The objections to a general colonial tariff would be greatly lessened by grouping them geographically, such as an Australasian group, an Eastern group, a South African group, and a Canadian group, including perhaps the West Indies, though here the interests of the islands and Canada would occasionally be very divergent. The same difficulty would moreover arise in making a differential tariff in favour of the mother country, that the most favoured nation article in several of our commercial treaties would be imperilled; and this brings me to the last point, on which I would say a few words.

These treaties at present secure for us facilities of trade in

almost every important market of the world, and the exception of Spain, where we are still treated on a worse footing than other countries, is a striking example of the inconvenience that would arise if this system of treaties were done away with. It must also be remembered that these treaties provide for subjects of the parties to the treaty carrying on business in each other's dominions, which is a valuable safeguard against very high duties, for under this provision a protected article may be, and sometimes is, manufactured in the very protecting country itself by foreign workmen, who are introduced by the foreign capitalist in order to avoid paying the extravagant duties.

If a real war of tariffs should ever come, and this provision has ceased to exist, such rights will certainly be endangered, and foreign workers in industries which compete successfully with home manufactures will be excluded from coming to exercise their callings. This would intensify materially the tariff war. It is held indeed by some that customs tariffs in each country should be entirely autonomous, and that commercial treaties, and especially those which contain tariffs guaranteeing fixed duties for a certain time, are an offence against political economy. The Cobden treaty with France and those which followed it have been especially objected to as being contrary to Cobden's true principles. But it can be claimed for these treaties that besides securing commerce against sudden increases of duty, they often break down the barriers of protection by enlisting on the side of free trade important classes in both the countries between which such a treaty is being negotiated. For instance, free trade in England was brought about chiefly by the manufacturer combining with the consumer to get cheap food. It is not more immoral for the French wine grower to combine with the English cotton producer to make a commercial treaty with lower duties on French wines and English cottons. This sort of bargain is however very different to negotiations commencing with one or both parties making what is called a *tarif de combat*, or tariff which is avowedly bad for the country itself and for trade generally, but is put on only as a weapon to secure concessions from another Power. As there is no limit to the duties which may be imposed in a tariff war of this kind, the absurdity of negotiating on such terms is apparent, but in connection with duties which are not essential *per se*, nor on the other hand really injurious, it is difficult to imagine why commercial bargains should not be made. The consumers in a country are generally a feeble folk, or at any rate do not know their own strength, and it is desirable for them to secure the support of a producing class to play off against another class of producers who may *think themselves* injured by reduction of duties, and indeed

may be temporarily injured, although general trade and industry will be benefited thereby.

I have tried then in this necessarily brief sketch to show that it is not the case that European tariffs have generally been raised in the last generation, although the present out-look is dark; that there are great practical difficulties in trying to impose protective duties without interfering with cheap manufacture; that a Zollverein of the British Empire, a desirable object in itself, entails geographical objections, and a tremendous complication of tariffs, besides interference with commercial treaties; that such treaties when wisely made are the best aids to trade, and in conclusion I would express the hope that the threatened continental war of tariffs may be averted, and that an extension of trade both between European States and also with new markets in Asia and Africa may again restore prosperity.

TABLE A.—*Statement showing the Total Value of the* IMPORTS *for Home Consumption and the* EXPORTS *of Domestic Produce into and from France, Italy, the United States, and the United Kingdom, during the Six Months ended 30th June,* 1883, 1884, *and* 1885.

(MERCHANDISE ONLY.)

[000's omitted.]

	Imports.			Exports.		
	1883.	1884.	1885.	1883.	1884.	1885.
France..... { frs.	2,333,811,	2,209,987,	2,193,062,	1,665,607,	1,522,140,	1,568,223,
{ £	93,352,	88,399,	87,722, −6% from '83	66,624,	60,886,	62,729, −6% from '83
Italy ..... { lire	648,749,	683,005,	751,826,	614,006,	580,724,	491,276,
{ £	25,950,	27,320,	30,073, +16% from '83	24,560,	23,229,	19,651, −20% from '83
United States*... { dols.	352,125,	332,757,	280,921,	387,768,	335,209,	327,937,
{ £	73,359,*	69,324,*	58,525,* −20% from '83	80,785,	69,835,	68,320. −15% from '83
United Kingdom £	217,000,*	199,000,*	193,000,* −11% from '83	117,000,	116,000,	104,400, −11% from '83

* These figures represent the general trade, the special not being distinguished.

TABLE B.—*Statement showing the Import Duties Levied in the undermentioned Countries on certain Articles of British Produce in each of the Years* 1859, 1879, *and* 1885.

Tariff Classification.	Rates of Duty.		
	1859.	1879.	1885.
RUSSIA.	£ s. d.	£ s. d.	£ s. d.
Cotton yarns	cwt. 1 17 11	cwt. ..... 1 12 −	cwt., aver. 2 13 −
,, tissues, excluding prints and very fine tissues	,, aver. 8 − −	,, aver. 7 − −	,, ,, 9 − −
Cotton tissues, prints	,, ,, ... 14 10 −	,, ,, ... 12 − −	,, ,, 14 14 −
Woollen ,, ...	Different classifications, but generally decreased rates in 1879 compared with 1859.		Increased rates in 1885.
Pig iron	cwt. ..... − − 6½	cwt. ..... − − 6 (free for machinery)	cwt. ..... − − 7
Iron rails	,, ... − 3 9½	cwt. ..... − 1 11½	,, ... − 4 11
GERMANY.			
Cotton yarns, unbleached..	cwt. ..... − 9 2	cwt. ..... − 6 1	cwt., aver. − 13 −
tissues (all)	,, ... 7 12 5	,, from 1 10 − to 4 − −	,, from 2 − 8 to 8 17 10
Woollen ,, printed	,, ... 7 12 5	,, ... 3 16 2	,, about 4 15 −
Pig iron.....	,, ... − 1 −¼	Free	,, ... − − 6
Iron rails	,, ... − 4 6¼	,,	,, ... − 1 3¼

TABLE B.—*Showing the Import Duties Levied on Articles of British Produce—Contd.*

Tariff Classification.	Rates of Duty. 1859.	1879.	1885.
	£ s. d.	£ s. d.	£ s. d.
HOLLAND.			
Cotton yarns	cwt. from – – 11½ to – 5 9	Free	Free
„ tissues	4½% *ad val.*	5% *ad val.* Free for printing and dyeing 5% *ad val.*	5% *ad val.* Free for printing and dyeing 5% *ad val.*
Woollen „	cwt. 1 8 9	Free	Free
Pig iron	Free	„	„
Iron rails	„		
BELGIUM.			
Cotton yarns (except the finest)	cwt., about 2 6 –	cwt., about – 10 –	cwt., about – 10 –
Cotton tissues, unbleached or bleached	„ 4 7 10	Various, but average less than 3*l.*	Various, but average less than 3*l.*
Woollen tissues	„ from 6 – – to 9 – –	10% *ad val.* or cwt. 5 5 8	10% *ad val.*
Pig iron	„ ..... – 1 –	„ ..... – – 2½	cwt. ..... – – 2½
Iron rails	„ ..... – 2 –	„ ..... – – 5	„ ..... – – 5
FRANCE.			
Cotton yarns, unbleached	Prohibited, except the very fine	cwt. from – 6 – to 6 – –	cwt. from – 6 – to .... 6 – –
„ tissues „	Prohibited	Various, but average 3*l.* or 4*l.*	Various, but ranging from 1*l.* to about 11*l.*
Woollen „	„	10% *ad val.*	Various, but average from .... 1 10 – to ..... 2 10 –
Pig iron	cwt. ..... – 2 –	cwt. ..... – – 10	cwt. ..... – – 7¼
Iron rails	„ about – 6 –	„ ..... – 2 5	„ ..... – 2 –½
SARDINIA (ITALY).			
Cotton yarns, fine	cwt. ..... – 18 8	cwt. ..... – 9 4	cwt., average of all unbleached – 16 –
„ tissues, unbleached or bleached	„ 1 15 1	„ ..... – 18 9	cwt., aver. 1 16 –
Woollen tissues	„ 4 13 6	10% *ad. val.*	„ „ 3 3 –
Pig iron	Free	Free	Free
Iron rails	„ ..... – – 5½	„ ..... – – 5½	„ ..... – 1 2¾
AUSTRIA.			
Cotton yarns	cwt. ..... – 10 8	cwt., aver. – 9 –	cwt., aver. – 10 –
„ tissues „ common	„ 4 5 4	„ „ 2 2 –	„ „ 2 2 –
Woollen tissues, common	„ 5 6 8	„ „ 3 – –	„ about 3 6 –
Pig iron	„ ..... – – 10¼	„ ..... – – 6	„ ..... – – 10
Iron rails	„ ..... – 5 4	„ ..... – 2 6½	„ ..... – 2 9½
UNITED STATES.			
Cotton yarns	19% *ad val.*	About 50% *ad val.*	About 50% *ad val.*
„ tissues, unbleached	19% to 24%	„ 40% „	„ 40% „
Woollen „	24% *ad val.*	From 60 to 70% *ad val.*	From 60 to 70% „
Pig iron	24% „	cwt. ..... – 1 5½	cwt. ..... – 1 5
Iron rails	24% „	„ ..... – 3 3	„ ..... – 3 3

On Methods *of* Ascertaining Variations *in the* Rate *of* Births, Deaths, *and* Marriages.

By F. Y. Edgeworth, Esq., M.A., F.S.S.

[Read before Section F of the British Association for the Advancement of Science, at Aberdeen, September, 1885.]

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THE function of the higher branch of the Calculus of Probabilities as an aid to induction, the method of eliminating chance by the mathematical theory of errors, is the subject of this paper. It is proposed to discuss certain cases in which this operation presents peculiar difficulties. The consideration of particular cases is introduced by a brief review of the general principle.

For a theoretical exposition of the principle reference may be made to the writer's paper on "Methods of Statistics."* An example will be here sufficient to revive in the reader's mind the appropriate conceptions. Suppose it had been observed that the mean life time of a number of abstainers from liquor was greater by a year or two than that of the general population; what presumption would there be that this difference was not accidental? The mathematical methods of statistics profess to give an answer to this sort of question.

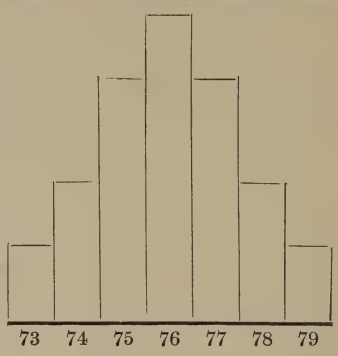
To fix the ideas, let us suppose that the deaths observed are those of men at or above 66, demarcated from the general male population of that age by no other attribute but total abstinence. And let us suppose the population to be stationary,† so that the ordinary life tables may be applicable to the problem. Let the mean age at death of the general male population above 65 be 76.‡ Let us consider what difference from this mean would be presented by the mean age at death of groups selected really at random; for instance, if the groups were constituted by choosing at random a letter of the alphabet, and then taking from the mortuary lists the first person who had that letter at the beginning or end of his name. In such a case mathematical theory shows that a great

* *Journal of the Statistical Society*, Jubilee meeting, 1885.

† For the ages selected, this hypothesis is not so wide of the mark, as it would be for earlier ages. Accordingly to put, as we suppose, the mean age at death for the mean expectation of life is not so erroneous.

‡ It is, I think, 75·8 for England.

number of groups would have the mean age 76. There would be some however whose mean age would be 75 or 77; and a still smaller number for whom the figure would be 74 or 78. The relation between the ages and the number of groups corresponding to each would be given by a figure like the accompanying: where the degrees of the horizontal line represent ages, and the corresponding columns the number of groups which would have each particular age as their mean age at death. The tops of the columns may be regarded as a curve when the degrees on the horizontal line are sufficiently small. It is in all cases the same curve; the same in the sense in which all ellipses are the same, of the same genus, but differing in species: some more oval or eccentric than others. The circumstances upon which the species of our curve depend are (1) the number of men in each of the groups whose mean age we suppose to have been observed, and (2) a certain datum afforded by the column d_x of a life table. From these statistics we have to extract a certain coefficient or constant which may be called the *fluctuation*.*



For English males who have attained the age of 65 I find that the fluctuation (double-mean-square of error) is about 90 for an individual. Whence the modulus square for the probability-curve under which range the means of several random groups each containing s individuals is $\frac{90}{s}$. For further illustration the mathematical reader is referred to my paper "On Observations and "Statistics" in the "Cambridge Philosophical Transactions" for 1885.

Given the number of men in each group, and the requisite constant, we can at once assign the probability that a group should not diverge from 76 beyond a certain extent. For instance let the number of men in each group be 25. Then I find that out of a large number of such groups, about half would have their mean age between 74 and 76, and $\frac{499}{500}$ (of the total number of groups examined) would fall between 72 and 80. But, if the number in each group were 100, then the extreme limits between which that large proportion ($\frac{499}{500}$) of the groups would fall would be much narrower, viz., 74—76. If the number in each group is 1,000,

* See "Methods of Statistics."

then 449 out of 500 such groups would in the long run fall within the limits 75·4—76·6. In other words, there is a probability of 449 : 1 that the mean age of a group of 1,000 selected at random will not fall outside those limits. And there is a much greater probability that it will not fall outside wider limits, *e.g.*, 75—77. If then the mean age at death of 1,000 total abstainers* is greater than 77, if it exceeds the mean age of the general population by a year only, we may be practically certain that the cause of that excess is not that† "mass of floating causes" called chance. We have cut away that hypothesis. We have eliminated chance.

This view of the logical character of our method assists us in judging how far the method is indispensable. A similar abscission of certain antecedents as immaterial is constantly going on in inductive logic, by a much less formal and almost unconscious process. It is presupposed in every act of the Method of Difference. The chemist rejects historical events as immaterial; the historian the conjuncture of the stars. There is in each case a vast substructure of previous knowledge of the connection between things; not very prominent perhaps in treatises on logic, yet constituting the foundations of wisdom. Now it may well be that the "mass of "floating causes" may, like other antecedents, be known beforehand to be immaterial. The physicist who investigates the effects of the sun upon magnetism need not inquire as to this effect if it is, but only what it is. He is in this respect in a very different position from one who, like Professor Jevons, undertakes to prove a connection between sun spots and commercial fluctuations. In the former case, unlike the latter, it is not necessary to eliminate chance—it is already out of court.

But, even in cases where the advantage of having chance excluded is not given beforehand, it is probable that experience conversant with a particular class of phenomena, unmethodically attains to maxims such as it is the object of our canon to afford: as to the extent of divergence between means which is not accidental, but is significant of a real difference. The registrar-general would doubtless not require to apply the Theory of Errors, in order to be sure, as he seems to have been,‡ that a difference of 0·3 in the mortality per cent. of "young farmers" as compared with that of the general male population of the same age, founded as it was on the death of 65 young farmers, could not be accidental, but required an explanation.

But not only may unmethodical wisdom to some extent

* Belonging to the general male population who have attained 65.

† Mill.

‡ Supplement to registrar-general's reports, 1875. *Cp.* "Methods of Statistics," p. 205.

dispense with, and to some extent provide, tests for eliminating chance; but also the Calculus of Probabilities itself affords another formal method of performing this operation. This is the elementary practice of cutting up means to see if the parts give the same indication as the whole; putting them to the torture so to speak, and taking for granted that, if they persist in giving the same answer, that answer must be true. For example, if out of our 1,000 total abstainers ten sets of a hundred taken at random presented each a mean age above that of adult males in general, it would be reasonable to conclude that this result is not accidental. I have elsewhere* discussed this method, and shown that, as compared with the higher method, it produces less effect with the same labour, requires more labour for the same effect. To reject the higher method is to forego an advantage which past experience† puts within our reach. It is to persist in using a hand mill rather than the powerful machinery which the accumulations of capital have rendered possible. It is doubtless true that the ruder implements are often not far to seek. In the same field in which our grain is produced are found stones for grinding it by hand. The same statistics which recorded that the mean life of 1,000 total abstainers was exceptionally long, would be likely to afford the means of testing whether the mean life of each 100 was exceptionally long. Still it is reasonable to suppose that with advancing civilisation the more powerful machinery will be more and more required.

But if the immediate practical utility of the higher method appears doubtful, at least it may be admitted that it is an object of considerable beauty and philosophic interest. Those qualities might be contemplated under two aspects: the real constancy and the apparent irregularity of that phenomenon which, entering into the various definitions of "precision," "probable error," "modulus," or "fluctuation,"‡ constitutes the leading feature of the theory.

Paradoxical as it sounds, fluctuation is one of the least flux things in the world. Thus the coefficient denoting the divergence of the stature of individuals from the mean height of a class is much more constant than the mean height of classes. Signor Perozzo found the same modulus, 3·7 inches, for ten Italian provinces whose mean heights differ very considerably; and I have found the same value (3·7) for a great variety of British and

* "Methods of Statistics."

† As to the extent of divergence in means which is to be expected as a result of mere chance.

‡ = *modulus squared*, a quantity for which it is convenient to have a special term.

American anthropometrical* statistics. Every observed constancy confirms the presumption that moduli in general are apt to be constant, and the certainty that the modulus which has been found constant for one class of phenomena holds good for adjacent phenomena. Such for example was, in however slight a degree, the effect produced, when the writer observed that even in such an out-of-the-way corner of nature as a wasp's nest,† the numbers of incomers and outgoers fluctuated according to a constant modulus 8·5; and when he found that the observation made on one nest in 1884 held good for four nests in 1885 at the same place‡ (Edgeworthstown, Ireland). The constancy of fluctuation in the Virgilian hexameter, noticed in the former, and verified in this, paper, is an equally unsuspected and striking phenomenon. This constancy of fluctuation—besides being a necessary datum for the elimination of chance—appears to be in itself a very curious circumstance, one not predictable from the general principles of the Calculus of Probabilities.

But in order to bring out this regularity there is requisite a long series of observations. The mean of half-a-dozen observations is apt to differ widely from the mean of another half-dozen observations. For, though the thing measured, fluctuation, is peculiarly constant, yet the measurement is peculiarly inaccurate. The "probable error" of a value based on sixteen observations is as much as an *eighth part* of the real thing observed. *A quarter* would not be a very improbable error. It follows that in many of the following investigations we must be content with a loose general idea of the real relations which underlie the shifting superficies of chance. It is a useful discipline to walk in a world where, though the objects themselves are fixed, their images are ever vibrating through a large part of their own dimensions. The Calculus of Probabilities—and this branch of it in particular—conveys a lesson which is required for the study of social science, the power of contemplating general tendencies through the wavering medium of particulars. It is a power which does not always accompany the mathematics of the cathedra adapted to the comparative rigidity of physics; and which will never be attained by those persons unaccustomed to abstract reasoning, who are always extolling with partial praises the exclusively historical method in social science.

The subject of this study is a case of the general method of

* The statistics given at p. 195 of "Methods of Statistics," show much greater uniformity when treated by the corrected methods which will be noticed elsewhere.

† "Methods of Statistics."

‡ The observation that the fluctuation for the exports is greater than for imports made last year (ibid., p. 210), was fully confirmed this year.

eliminating chance by the Theory of Errors. The case may be described as that of *Entangled Moduli.* This term in its generality covers all the cases where instead of a single modulus to be extracted from a single set of observations (as in the examples given in my paper on the "Methods of Statistics"*) we have several moduli to be *simultaneously* determined. The problem to which this inquiry is specially directed is: being given, death or other rates for groups of population which are defined by place and time, to find the *fluctuation* (modulus squared) of rates for groups defined by other attributes than place or time. This problem may be introduced by a lemma taken from a widely different field, the statistics of the number† of dactyls in Virgilian lines. It is required to elicit the entangled from the explicit fluctuations of dactyl-frequency:—

Æneid, XI, 1–75.	Lines 1—5	6—10	11—15	16—20	21—25	26—30	31—35	36—40	41—45	46—50	51—55	56—60	61—65	66—70	17—75	Sums.	Means.	Fluctuations.
First foot	3	3	5	5	4	4	2	2	2	1	2	4	3	2	4	46	3·06	2·8
Second ,,	1	4	0	3	3	3	5	2	2	4	3	1	2	3	2	38	2·5	3·2
Third ,,	1	2	4	2	5	2	1	2	2	2	0	2	2	0	1	28	1·86	3·1
Fourth ,,	2	2	1	0	3	1	2	0	2	1	1	2	1	1	0	19	1·26	1
Sums	7	11	10	10	15	10	10	6	8	8	6	9	8	6	7	131	8·68	10
Means ...	1·75	2·76	2·5	2·5	3·75	2·5	2·5	1·5	2	2	1·5	2·25	2	1·5	1·75	33	2·17	2·5
Fluctuations	1·5	2·5	9	7	3	3	5	2	0	3	3	2·5	1	3	2·5	208 48	3·09 3·2	

In this table each of the first fifteen figures in the first row is the number of dactyls which occur in the first feet of five consecutive lines. For example, in the passage, Æneid, XI, 1—5 (inclusive), there are three lines which have a dactyl in the first foot. The number of dactyls in the second feet are recorded in the second row. In the passage just cited there is one line which has a dactyl in the second foot. The dactyls of the third and fourth feet are similarly registered. The sums and means of these figures taken horizontally and vertically are given in the antepen-

* *Journal of the Statistical Society*, 1885.

† "Methods of Statistics," pp. 211 and 212.

ultimate and penultimate row and column. In the last column the first figure 2·8 is the *fluctuation* of the first fifteen figures of the row; that is twice the sum of the squares of the differences between each and the mean of all (viz., 3 approximately).

Differences.		Squares of Differences.
−	+	
	0	0
	0	4
	2	4
	2	1
	1	1
	1	1
1		1
1		1
1		4
2		1
1	1	1
	0	1
1		0
	1	1
7	8	15) 21 $= Se^2$
		$1{\cdot}4 = \frac{Se^2}{n}$
		2
		$2{\cdot}8 = 2\,\frac{Se^2}{n}$ = Fluctuation.

In performing this operation I recommend separating, as above, the positive and negative errors, since the equality of their respective sums checks the correctness of the mean. The three next figures of the last column are similarly constituted.

We come then to a cell in which there are two denizens, one erect and one recumbent. The latter, as its posture is designed to express, is a *fluctuation*. It is then the fluctuation of the row to which the cell belongs of the sums of columns. The other denizen of the cell, the erect 10, is a *sum*, the sum of the fluctuations of the four first rows. Similarly in the next cell: 0·6 is the fluctuation of the row of means (which is of course a $\frac{1}{16}$th of the fluctuation of the row of sums); 2·5 is the mean fluctuation of the four first rows.

The relation of the last two figures is instructive. They ought to be equal, if the fluctuation of the four rows was not only equal, but *identical* in this sense: that, whenever one went up or down, the others did so also to the same extent; if in short the four waves might be regarded as sections of the same great wave. This result would be unaffected, though we supposed the mean height of the four waves to be different; as it were an identical

fluctuation executed in four canals of different level. Again, if the fluctuations were all independent, the fluctuation of the means should be a quarter of the mean fluctuation. Lastly, the fluctuation of the means ought to be less than a quarter of the mean fluctuation, if the primitive waves were *compensatory* in this sense: that, wherever there was a trough in one, there was apt to be a crest in the other; as if a dactyl in the first foot was frequently followed by a spondee in the second.

Now as a matter of fact the fluctuation of the means, 0·6, is just a quarter of the mean fluctuation 2·5. The second hypothesis therefore is the true one.

Let us now consider the cell which contains the mean of the row of fluctuations and the fluctuation of the column of means; respectively 3·2 and 0·9. The relation of the figures presents the same alternatives as those above described, except that instead of $\frac{1}{4}$ we must now read $\frac{1}{15}$. Now $\frac{3\cdot2}{15}$ is much less than 0·9. We are driven then to the supposition that the transverse, or columnar, fluctuations are not independent. The hypothesis of interdependence presents two cases; the columns may be to some extent *identical* in two ways.* To fix the ideas, suppose that the three first figures of the first row were the same, that the second triplet of the same row was similarly homogeneous, while differing in random fashion from the first triplet. Let the second, third, and fourth row be at the same level; with equal fluctuations, alike constrained internally, but as regards each other independent. Then the fluctuation of the means, instead of being $\frac{1}{15}$th of the mean fluctuation, would be only $\frac{1}{5}$th of it.

This supposition is of course evidently contrary to fact. Still there may well be an interdependence between sequent lines not obvious to inspection. This alternative is cut away by the observations given in my paper on† "Methods of Statistics." I find that the fluctuation of means of n Virgilian lines is very nearly the nth part of the fluctuation for single lines (viz., 1·4). This fact is inconsistent with the interdependence under consideration.

There remains the hypothesis that the rows are at a different level. And this is proved to be true. For, the fluctuation of each row being as just shown internally independent, the fluctuation of the mean of a row must follow the normal law; it must be about $\frac{1}{15}$th of the fluctuation of the row. Thus the fluctuation of the means for the first and fourth foot respectively would be $\frac{3\cdot06}{15}$ and $\frac{1\cdot26}{15}$ say 0·2 and 0·8. Therefore the modulus of comparison‡ is $\sqrt{0\cdot2 + 0\cdot08} = 0\cdot46$. The observed difference between the mean fourth and mean first foot is $3\cdot06 - 1\cdot26 = 1\cdot8$; about

* See above, p. 635. † P. 212.

‡ "Methods of Statistics," p. 188.

four times the modulus. The difference indicated is therefore real. The difference between the other mean feet is slighter, but still real.

This conclusion may be verified by one of the humbler methods of statistics. Out of fifteen trials, so to speak, the first foot is only *five* times less than the second. The preponderance of the first over the third and fourth feet is even more marked. We have heard of the "hexameter rising aloft like a silvery column." We now see that this column tapers up to its capital—the fifth foot with its almost constant dactyl.

We have now the conception of four undulations in four level and parallel canals; the canals at different levels, the disturbances purely casual* and unaffected by each other; let us apply this result to answer this question: what is the fluctuation of the mean of four figures taken at random from our table? The answer differs according to the character of the randomness. If the first of each four is taken (at random) from the first row, the second from the second, and so on; then in the fluctuation of the means so formed the element due to the different level of the different rows will have disappeared. The fluctuation of these means ought to be the same as the fluctuation of the means formed each from the *same* column: that is as the fluctuation of the last row but one in the table at p. 634. Here are fifteen means formed in the manner described:—

2·25, 3, 2·5, 2·5, 3, 2, 1·75, 2, 2·5, 1·25, 1·75, 2·75, 1·5, 1·75, 2·5.

The mean of these is 2·2; and the mean square of differences, formed in the manner described at p. 635, is 0·26. The *fluctuation* therefore is 0·5. The fluctuation to which by theory it should be equal is 0·6, a consilience as near as could be expected.

On the other hand, if the four figures to be meaned are selected at random from *any* row of the table, then the inequality of the mean heights of the rows will make itself felt. The fluctuation of means so formed should exceed the fluctuation of the former class by one-fourth of the double mean square of error presented by the different levels of the rows. Call this quantity $2S\epsilon^2$. Recollecting that 0·9 is the fluctuation of the (first four figures of the) last row but one, we have the equation $0{\cdot}9 = 2S\epsilon^2 + \frac{1}{15}$ mean fluctuation of rows. $0{\cdot}9 = 2S\epsilon^2 + \frac{1}{15}2{\cdot}5$. $2S\epsilon^2 = 0{\cdot}73$. $\frac{1}{4}2S\epsilon^2 = 0{\cdot}18$. Hence the fluctuation of this class of means ought to be 0·6 + 0·18. Here are fifteen means formed thus. I took the first of the digits which I came across in a page of death-rates, and selected a figure from the corresponding row of the table at p. 634; again, another

* *Cp.* below, p. 639.

digit and another figure on the same principle; and took the mean of each four figures thus given. The means are: —

1·5, 2·75, 2, 2·25, 2·25, 3·25, 2, 1·75, 1, 2, 1·75, 1·75, 2·5, 1·75, 3·25.

The mean of these is 2·1; and the fluctuation calculated in the usual way 0·74; that is almost what it ought to be, viz., 0·78.

These conclusions may be made more exact by extending our observations. I have analysed two hundred additional lines, Æneid, XI, 76—150, and Æneid, VI, 270—394. The following table conveys the result of the whole examination:—

275 Hexameters.	Means.	Fluctuation.
First foot	2·8	2·9
Second foot	2·3	2·1
Third „	1·9	2·4
Fourth „	1·3	1·5
Means	2·1	2·2 0·425
Fluctuation	3·4 0·6	—

I should observe that I have not taken the trouble of calculating the mean columnar fluctuation (3·4) for all the 275 lines; but have merely verified and corrected the result of the previous seventy-five observations by a few additional ones. Nor is the fluctuation of fringe rows (0·425) based on 275 observations, but only on 150. The recumbent figure 0·6 is the fluctuation of the column of means in this table. It proves to be also (what might not have been the case) the mean of the three means similarly related to each of the constituent tables.

This table confirms our conclusion concerning the difference between the feet. We see also that there is a difference in the fluctuation certainly between the fourth and first, and very probably between each of these and the second and third. If there was no *compensatory** action between the fluctuations of the different feet, the recumbent figure in the cell common to the fluctuation column and the mean row (0·425) ought to be equal to a quarter of the erect figure 2·2. In so far as the latter falls short a little, we may suspect a little compensation of the kind des-

* See p. 636.

cribed. I have subjected this curious point to further examination. Adding the first and second feet of each quintette for the passage, Æneid, VI, 270—394, I find the fluctuation for these sums to be 6; whereas if there were no compensation this fluctuation ought to have been 7, the sum of the separate fluctuations (as calculated from that passage). But as the latter fluctuation so calculated has a probable error of nearly unity, as, when calculated from fifty-five observations (of quintettes) it is exactly 6, we must not rely much on the indication given.

It is instructive to compare these results with those which I have given in my paper on the "Methods of Statistics," pp. 31 and 32. According to the present observations the mean number of dactyls in a quintette is 8·3 (the sum of the first four figures in the column of means at p. 638). Therefore the mean number in a single line 1·66. The mean number given by the former series of observations was 1·62.* Again, the fluctuation of the number of dactyls in a single line is, according to this paper, 1·4. For the fluctuation for a single line is $\frac{1}{5}$th of the fluctuation for a quintette. And the fluctuation for a quintette of lines is sixteen times the fluctuation of the mean foot. And the fluctuation of the mean foot in a quintette is by the table at p. 638 0·425. Hence the fluctuation of the dactyls in a single line $=\frac{1}{5}\times 16\times \cdot 425=1\cdot 4$; exactly what was obtained in the former paper.†

But it is time to terminate this introductory lemma. It is time to proceed from the parade ground to the campaign, and to employ the arts which have been acquired in the field of Virgilian statistics to attack the more difficult and important problem. It is required to calculate from the registrar-general's returns the fluctuation of death-rates in the following cases: (1) several groups of the same size (say 100 or 1,000) are taken at random from the population resident at the same place in the same year, and the death-rates calculated for each group; (2) the death-rates relate to groups which have been formed by random selection of individuals from different years and places.

The following metaphor may assist us in forming the appropriate conceptions. The site of a city consists of several terraces, produced it may be by the gentler geological agencies. The terraces lie parallel to each other, east and west. They are intersected perpendicularly by ridges which have been produced by igneous displacement. We might suppose the volcanic agency to

* "Methods of Statistics," p. 211.

† This consilience is much greater than might have been expected—even taking into account that out of the 600 lines which entered into the former series 125 were common to the present series of 275 lines—and is calculated to give us confidence in handling the mathematical instrument of statistics.

travel at a uniform rate from west to east, producing each year a ridge of the same breadth. It is not known prior to observation whether the displacement of one year resembles (in any, or all, the terraces) the displacements in the proximate years. Nor is it known whether the displacement in one terrace is apt to be identical with that in the neighbouring terraces. Upon the ground thus intersected and escarped are built miscellaneous houses. The height of each housetop above the level of the sea is ascertainable barometrically or otherwise. The mean height above the sea of the housetops for each acre is registered. It is required from these data to elicit the fluctuation of the height of houses above the ground.

Let us take first the case of mortality at all ages; and afterwards that of special age-periods—

	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	Sums.	Means.	Fluctuations.
Berks.....	175	172	187	186	181	153	169	166	1,389	**173½**	224
Herts	174	165	185	184	**176**	186	163	188	1,401	**175**	176
Bucks	182	171	186	195	179	162	177	183	1,435	**179½**	172
Oxford	179	182	194	183	180	169	167	166	1,420	**177½**	162
Bedford	196	174	203	195	198	171	181	184	1,502	**188½**	246
Cambridge	173	177	190	191	187	165	171	181	1,435	**179½**	158
Sums	1,079	1,041	1,145	1,134	1,101	986	1,028	1,068	8,582	**1,073**	1,138
Means	**180**	**173½**	**191**	**189**	**183½**	**164**	**171**	**178**	**1,630**	**179**	**190** 146
Fluctuations	124	55	77	50	107	68	73	152	—	846 88	—

Here is a strip extracted from the registrar-general's statistics of the death-rates in different counties (Report, 1883, p. 53), upon which I have operated (*a.*) in the manner explained at p. 634. Let C^2 be the fluctuation which it is required to determine; put $C^2 + C_t^2$ for the fluctuation of a row. The mean value of $C^2 + C_t^2$ is 189. The fluctuation of the fringe row (in black figures) is $\frac{C^2}{6} + \alpha C_t^2$; where α is a coefficient depending on the degree of* *identity*

* See p. 635.

prevailing between the fluctuations of the different rows. If we trace the curves formed by the rows, there will appear in them a considerable sameness. However, α must fall short of unity. The value of the fringe fluctuation is 146. Eliminating C_t^2 from the two equations which have been stated, we have $C^2 = \frac{\alpha 190 - 146}{\alpha - \frac{1}{6}}$. It is clear that C^2 increases with α. Therefore as α cannot exceed 1, we have for a superior limit of C^2, $\frac{44}{\frac{5}{6}}$ or 53.

Proceeding similarly with the vertical rows and the vertical fringe, we have $C^2 + C_p^2 = 88$.

$$\frac{C^2}{8} + C_p^2 = 46.$$

Whence $C^2 = \frac{\beta 88 - 46}{\beta - \frac{1}{8}}$. And as β cannot be greater than unity, we have for a superior limit of C^2, $\frac{42}{\frac{7}{8}}$ or 48.

I have similarly treated two other strips of mortuary returns, (1), for the years 1872-79 inclusive, and the same six midland counties, and (2), for the years 1869-76, and seven midland counties, the same six with the addition of Northampton. I find by the method of extrication just described for superior limits of C^2, (1), 54 and 47, and (2), 140 and 35.

(*b.*) These results are confirmed by a method which may be termed Collation. Suppose in the formation of the site* of our imaginary city that the igneous displacements had been exactly the same along each ridge; that is, that every acre along the same ridge had been upheaved to exactly the same extent, we might then as it were bring the two acres belonging to the same terrace and different ridges to the same level, if we knew the difference between the height of the ridges. Then a comparison of the mean height above the sea (thus corrected) of the houses in the two acres would afford a datum for calculating the fluctuation of house-height. The square of the difference between the two corrected mean heights is to be equated to the required fluctuation. Of course this calculation is very inexact. The ridges cannot be supposed to be unbroken *arêtes*, nor, even if it were so, should we have the means of ascertaining the difference between the heights of two *arêtes*. The difference between the given mean height (of the house-tops above the sea) would be affected by the fluctuation of the houses. Accordingly the operation indicated would give only a superior limit for the sought fluctuation.

* See above.

	1881.	1876.		−	+	
Berks	153	175	22		6	36
Herts	166	174	8	8		64
Bucks	162	182	20		4	16
Oxford	169	179	10	6		36
Bedford	171	196	25		9	81
Cambridge	165	173	8	8		64
Sums	986	1,079	—	+22	−19	297
Means	**164**	**180**	—			**49**

The accompanying table illustrates this process. The first column contains the death-rates for 1881 in six midland counties.* The second column contains the returns for 1876. The third column gives the excess of the latter over the former. The fourth column gives the differences corrected by subtracting from each figure in the third column 16, the difference between the mean of the first and second columns. The sum of these differences ought, if our work is correct, to be equal to zero. The fifth column gives the squares of differences. The mean value of these (not now the double† mean value) is to be equated to the sought fluctuation. I have similarly compared five other of the years (given in table, p. 640) with 1881, and find as the mean of all the values obtained 44; a figure which, if our hypothesis were exact, would have a very respectable degree of precision. For, as being the‡ value of a squared modulus based on thirty-six observations, it would have a probable error of about 0·48 × the sixth part of itself, *i.e.*, about 3·5.

Another estimate upon the same principle may be formed, if in the preceding calculation we put "ridges" for "terraces" (years for counties), and *vice versâ*. In the accompanying table the first column gives the death-rates for eight years in Berkshire; the second column those in Cambridgeshire, the third gives the difference by which the latter exceeds the former; the fourth column the differences corrected by the subtraction of 6 $(179\frac{1}{2} - 173\frac{1}{2})$; the fifth column contains the squares of the differences whose mean is a value for the (superior limit of the) sought modulus. Constructing five other such tables, I find for the mean result 50.

* Registrar-general's report for 1882, p. 53. *Cp.* above, p. 640.

† The double mean value is the fluctuation for the probability-curve under which range the differences of any two values taken at random from under the sought probability-curve, that is double the sought fluctuation.

‡ The probable error of a fluctuation is roughly the fluctuation itself divided by the square root of the number of observations on which the calculation is based, and multiplied by the constant 0·475.

	Berkshire.	Cambridgeshire.	−	+	−	+	
1876	175	173	2		8		64
'77	172	177		5	1		1
'78	187	190		3	3		9
'79	186	191		5	1		1
'80	181	187		6		0	0
'81	153	165		12		6	36
'82	169	171		2	4		16
'83	166	181		15		9	81
	1,389	1,435			17	15	208
	173½	179½					26

(*c.*) I have endeavoured to verify directly this calculation. I have selected from the midland counties under review fourteen districts containing rural, and, as far as I know, similar populations of about 20,000 each. Dividing the number of deaths in 1861 by the population in 1861 for each district, I have calculated for the fourteen quotients their *fluctuation*. It is 560. This result is not much altered if I add six districts of population from 10,000 to 15,000 (with a correction for the inferior *weight* of these observations as compared with the former). The result of the twenty observations is a fluctuation 544. Now if we take as the result of our two preceding methods about 40 as the fluctuation for groups about the size of the specified midland counties, that is about 200,000, the fluctuation for districts with a population each of 20,000 ought to be, if we could suppose the element C_p^2 eliminated, ten times 40, or 400. There is therefore a rough consilience between this method and the preceding, it being remembered that they all only profess to assign *superior limits* to the sought coefficient.

By the same method I find from the rates of seven districts for 1871 the fluctuation 416. Again I have calculated the fluctuation of the male mortality for thirty-two districts taken at random from the class defined by Farr as "healthy" ("Royal Society Tran-"sactions," p. 39); the result is 485. The average male population of these districts is I think from 15,000 to 20,000. I would not however lay much stress upon this particular observation; partly because, relating to males it is not quite *in pari materiâ*, but chiefly because the districts are virtually selected upon the principle of having nearly coincident birth-rates.

(*d.*) There is yet another method, which may be called *à priori*, as contrasted with the preceding, which are formed on observation. It is rather difficult to estimate* the relative value of this

* See, on this point, "Methods of Statistics," pp. 191, 192, 198, 202, and the writings of Professor Lexis there cited.

method—of the "combinatorial" as distinguished from the "physical" modulus, in Professor Lexis's phrase. Perhaps it may be said that the former corroborates the latter by agreeing with it, but does not weaken it by differing from it. And we ought to be disposed towards the *à priori* calculation, as the literary man in "Punch" to his critic, "I don't care twopence for your opinion, but "if you say something favourable I shall be pleased." Or, in the case of death-rates at least, do not the observations discussed by Professor Lexis afford a good ground of experience, if not of * theory, for regarding the "combinatorial" modulus as an *inferior limit* of the true one? The modulus in question may be thus described. Suppose an urn containing an indefinitely large number of tickets, black and white, the black tickets having about the same ratio to the whole number of tickets as the number of deaths in the population under consideration to the total population. Then the fluctuation in the death-rates based upon groups of 200,000 exposed to risk (the approximate population of a midland county) will be the same as the fluctuation in the ratio of the black to the total number of tickets, if we make several random drawings of 200,000 tickets at a time from the urn. According to this hypothesis, if we take $\frac{180}{10,000}$ (the mean death-rate found by the table at p. 640) as what may be called the real ratio, then by a well-known formula the modulus of the fluctuation of the mortality per 10,000 for a population of 200,000 would be—

$$\sqrt{\frac{2 \times 180 \times 9820}{(10,000)^2 \times (200,000)}} \times 10,000 = \sqrt{18}.$$

Whence the fluctuation, or modulus squared, is 18. This result is not very much affected by the difficulty of deciding what is the precise ratio with which we should operate. If we take the mean death-rate for all England at 200 per 10,000, which is evidently far too high for the Midland counties, we should obtain 21·5 for the fluctuation.

Upon the whole we may put with some confidence 20 for an inferior and 50 as a superior limit of the quantity sought, the fluctuation of the mortality for a population of 200,000 living in the same county and year; and for populations of n the same figures multiplied by $\frac{200000}{n}$. This is the answer to the first part of our problem, when the groups under consideration are supposed

* "Methods of Statistics," *loc. cit.*

to be taken* from the same place and year. But when we consider groups taken from the general population of England at different epochs, the unknown quantities C^2_p and C^2_t appear to recur upon us.

Let us begin by discussing a case of abstract simplicity. Reverting to our† metaphor, let us suppose that each acre in our city was levelled before it was built upon. Then the fluctuation of house-tops taken at random from all parts of the city will be calculated upon the principle above exemplified‡ in the case of dactyls taken at random from *any* of the first four feet in a Virgilian passage. The required modulus will be $C^2 \times \frac{200000}{n} + \frac{\kappa^2}{n}$, where κ^2 is thus found. Find the mean height above the sea of the ground of the whole city. Take the difference between this and the height of each rectangular site. The sum of the squares of these differences, divided by their number and multiplied by 2, is to be equated to κ^2.

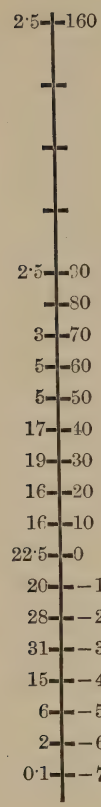
For example, let the selection be made from the population of all England in the same year. And let us suppose that within each district of population 200,000 there is only the fluctuation $C^2 \times \frac{200000}{n}$, or, if we put $C^2 \times 200000 = k^2$, $\frac{k^2}{n}$. Then we may thus take account of the different levels of the different places.

The accompanying line represents the proportionate numbers of population inhabiting districts having a certain mortality. The

* Of course it is supposed that if within one of our acres, one of the registrar-general's units, a county year, there prevail differences of level categories marked by differences of mortality (far beyond the probable error for the internal fluctuation)—as in the case of the time-divisions of the unit undoubtedly occurs—then the n persons exposed to risk must be selected in the same proportion from the different categories (*e.g.*, the different months), as the group for whom the registrar-general calculated the mortality per year. The subject of internal fluctuation will be made clearer it is hoped in the next few pages.

† See above, p. 640.

‡ P. 637.



figures on the right constitute a scale of mortality per 10,000, reckoned up and down from 220, the approximate mean for all England. The figures on the left represent corresponding numbers of persons. Thus, on the left, 16 opposite to 10 on the right means that the districts whose mortality is 230 contain a population of 1,600,000 approximately; 22·5 opposite 0 means a population of 2,250,000, living in districts of mortality 220 per 100,000. The data are taken from the supplement to the registrar-general's report, 1835, Table XXXVII.

In order to find κ^2, the part of the modulus due to the inequality of level, we ought to equate its half to the mean square of error of the different rates or sites, *weighted* by the proportionate numbers at height; that is to

$$\frac{(70)^2 \times 0{\cdot}1 + (60)^2 \times 2 + \&c., + 20 \times 1^2 + 0 + 16 \times 1^2 + \&c., + 2{\cdot}5 \times 16^2}{0{\cdot}1 + 2 + \&c., + 20 + 22{\cdot}5 + \&c., + 25}$$

(assuming, what would require correction if accuracy were an object, that 220 is the exact mean for all England). Hence $\frac{1}{2}\kappa^2$=about 1,500, $\kappa^2 = 3{,}000$; and the addition to the modulus which we found in answer to the first inquiry $\left(\frac{k^2}{n}\right)$ is $\frac{\kappa^2}{n}$, a quantity neglectible for groups of 1,000 and even much less.

So far we have been supposing* that each acre affords a perfectly level site. This however cannot be supposed. We are to think of each acre as presenting elevations and depressions which disappeared when we took the mean value for the whole acre (exactly as in the Virgilian statistics* the different levels of the feet did not affect means made up in a similar way). But this unevenness will make itself felt when we select our n persons exposed to risk *at random* from the whole population. There will be a new double sum of squares of error to be added to our modulus. It may be conjectured from statistics like those given in the supplement to the registrar-general's report 35, relating to the mean mortality in districts, that this addition to the fluctuation is of the same order as that which we have just examined, and is equally apt to be meaned away by large numbers. Thus we obtain to our second inquiry approximately the same answer as to the first.

So far of mortality at all ages. We come now to mortality at certain life periods, a problem which may be attacked by the same methods.

* See above, p. 645.

(*a.*) First is the method of extrication:—

	1873.	1874.	1875.	1876.	1877.	1878.	1879.	Sums.	Means.	Fluctuation.
Berks	73	82	70	75	71	71	73	515	**72**	29
Herts	80	82	62	66	74	71	67	502	**72**	94
Bucks	65	67	54	81	60	70	68	465	**69**	117
Oxford	81	92	68	67	78	74	66	526	**75**	150
Northampton	79	84	72	80	75	76	83	549	**78·5**	75
Bedford	70	80	55	85	75	80	78	523	**75**	74
Cambridge	74	75	65	76	65	70	66	491	**70**	41
Sums	522	562	446	530	498	512	501	3,571	**511**	701
Means	**74·5**	**80**	**66·5**	**76**	**71**	**73**	**71·5**	**510**	**73**	**100** 34
	58	103	101	86	70	24	77	519	26 **74**	

The accompanying table is constructed from the registrar-general's tables, giving the "annual rate of mortality per 1,000 "persons living at twelve groups of ages in each of the registra- "tion counties" (Reports, 36—42). The numbers in the smaller spaces are the rates per 10,000 at the age-period 25—35, for seven years and seven midland counties. By reasoning analogous to that which was employed for general mortality—

$$C_t^2 + C^2 = 100. \qquad C_p^2 + C^2 = 74.$$

$$\alpha C_t^2 + \frac{C^2}{7} = 34. \qquad \beta C_p^2 + \frac{C^2}{7} = 26.$$

$$C^2 = \frac{\alpha 100 - 34}{\alpha - \frac{1}{7}} = \text{at most } \frac{66}{\frac{6}{7}} = 77. \qquad C^2 = \frac{\beta 74 - 26}{\beta - \frac{1}{7}} = \text{at most } 56.$$

(*b.*) By the method of collation,* comparing six years with 1873, I obtain for a superior limit 36 (a determination of fluctuation resting on forty-two observations).

(*c.*) I have not attempted the method of *direct verification*, not having to hand the population of districts at the age 25—35.

(*d.*) To the evidence of the first and second methods the combinatorial hypothesis adds the weight which it can give* but not take away. If we estimate the population at the age 25—35 in a midland county as about 0·145 the total population (*Cp.* registrar-general's Report, 1883, p. 13), that is about 0·145 × 200,000 or

* See above, p. 641.

290,000, we have the hypothesis of drawing of 29,000 tickets made from an urn containing an indefinite number of black and white tickets in the proportion 73 : (10,000−73). The fluctuation of the rate per 10,000 then will be $\frac{2 \times 73 \times 9927}{29000} = 50$.

This result may be applied, as I have elsewhere* pointed out, to verify the registrar-general's conclusions concerning the relative unhealthiness of occupations. For the fluctuation of groups of about 16,000, such as that in several of the occupations specified by the registrar-general in the supplements to the twenty-fifth report (Table XXIII) and thirty-fifth report (Tables LXI and LXII) we ought to have about $50 \times \frac{29000}{10000}$ that is about 90.

I have taken the trouble of verifying this conclusion by a method of *collation* applied to the registrar-general's data. Observing that the mean mortality for all males at the age-period from 25—35 in 1871 exceeds that for 1861 by 20 per 10,000, I put in the first column of the accompanying table the rate per 10,000 of mortality (at age-period 25—35) in the specified trade for the year 1861, and in the second column the rate for 1871 diminished by 2. The third column contains the differences† between the first two; the first column the squares of differences, whose mean is to be equated to the fluctuation. The fifth column gives the means between the numbers of men in each trade in 1881 and 1871:—

	1861.	1871. Corrected.	Differences.‡		Squares of Difference.	Mean Population at Age 25—35.
			−	+		
Tailors	116·2	108·0	8		64	22
Farmers	85·6	74·1	11·5		132	28
Butchers	96·2	88·2	8		64	15·5
Bakers	79·4	80·0	0·5		0	13·000
Innkeepers	130·2	148·3		18	324	12·500
„ with wine merchants	132·1	145·6		13·5	196	15·000
Grocers	84·0	91·5		7·5	56	16·500
„ with others	86·6	86·1	0·5		0	19·000
Blacksmiths	83·6	86·9		3·3	11	24·500
Sums	—	—	29	42	848	16,600
Means	—	—	—		94	

This astonishing closeness between verification and prediction

* "Methods of Statistics," p. 205. † Ibid., *passim*.

‡ The equality of positive and negative differences is not *here*, as before, a test of the accuracy of our work, but rather of our hypothesis.

is doubtless but accidental. Neither the 90 calculated, nor the 94 observed, can be regarded as other than very rough estimates of a superior limit. In fact, if we had gone further with the collation of the mortalities in occupations, and taken in the miners and metal workers, and labourers, we should have obtained a much higher, but *not therefore inconsistent* value for the *superior limit.*

We have obtained indeed in the rough consilience of our methods not only as much as we deserve, but as we desire. For what we want is not the probable error, the precise point at which the difference* between means is as likely as not accidental; but the *improbable error*, a limit above which that difference is certainly significant. We do not want to drive our arguments along the very edge of fallacy; but rather to know the whereabouts of the precipice in order to keep at a distance from it. In the structure of Statistical Science we are concerned with the *breaking load* only as an indication of the *safe load;* we should not think of approaching, there is no interest in determining, the exact point at which our reasoning becomes strained and our conclusions begin to break down.

These methods of disentangling moduli are equally applicable to births and marriages. Having constructed four tables of marriages in the seven midland counties for the periods 1854-60, 1862-68, 1869-76, 1877-83 and comparing in each the mean fluctuation of the (ordinary) rows with the fluctuation of the fringe row, I find by the method of extrication the following superior limits of marriage-frequence or matrimoniality in a population of 200,000: 64, 88, 28, 24. Hence I think it would be safe to put for the fluctuation of a population of n from 30 to 60* multiplied by $\frac{200000}{n}$. Of course, if n is of an order greatly different from 200,000, and indeed in any case, it would be well to confirm this result by direct verification.

It may be observed that our fourth test, the principle of sortition, presents some difficulty in the case of marriage-rates. The number of lots is of course the number, not of the entire population, but of the marriageable portion of it. But what is that species of sortition in which the "favourable case" is the simultaneous drawing of two lots which are separate before the drawing? Shall the "number of possible cases" be the number of combinations between the unmarried but marriageable men and women in the country? Of what sort is the urn of the marriage lottery?

* The estimate in "Methods of Statistics," p. 203, is founded on the higher limit.

MISCELLANEA.

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I.—*Dr. William A. Guy, F.R.C.P., F.R.S.*

The following notice of the death of Dr. Guy, which took place in September last, appeared in the "Times" of that month. The melancholy event is referred to, as will be seen, in the President's Opening Address, in another page of the present number of the *Journal*:—

"The death is announced of Mr. W. A. Guy, M.B., F.R.S., F.R.C.P., which took place on the 10th instant at his residence, Gordon Street, Gordon Square, in the 76th year of his age. Mr. Guy was born at Chichester, and was educated at Christ's Hospital, at Guy's Hospital, and at Pembroke College, Cambridge. In 1831 he obtained the Fothergillian prize medal for an essay on asthma, and in 1837 graduated M.B. In 1838 Mr. Guy was appointed to the chair of forensic medicine in King's College, and in 1842 was made physician to King's College Hospital, having the care of the out-patients. From 1846 to 1858 he was dean of the medical department, and professor of hygiene in 1869. He was admitted a Fellow of the Royal College of Physicians in 1844, held office as censor in 1855, 1856, and 1866, and as examiner in 1861-63, and in 1861, 1868, and 1875 was appointed Croonian, Lumleian, and Harveian lecturer. Mr. Guy also held a number of other appointments, among which were honorary secretary to the Statistical Society in 1845, and president in 1873; examiner in forensic medicine at the University of London in 1862, Swiney prizeman 1869; and vice-president of the Royal Society in 1876-77. Mr. Guy devoted much attention for many years to questions of sanitary reform and social science, and in 1878 was appointed one of the Royal Commissioners to inquire into the working of the Penal Servitude Acts; also in 1879 a member of the Criminal Lunatic Commission. He was the author of many essays on physiology and kindred subjects, and also of works of a more general character. Among his principal publications may be mentioned *Principles of Forensic Medicine*, *Public Health*, *The Factors*

of the Unsound Mind, *John Howard's Winter's Journey*, and his last work, *The Claims of Science on public recognition and support.* It may be added that Mr. Guy was likewise editor of Hooper's *Physician's Vade-Mecum.*"

The following resolution on the subject was passed at the Ordinary Meeting of the Society in December:—

"Resolved,—That the Statistical Society desires to place on record its deep regret at the loss which it has sustained by the death of the late

William Augustus Guy, Esq., M.B., F.R.C.P., F.R.S.,

whose services to the Society extended over an uninterrupted period of forty-six years, namely, from 1839 to 1885.

"Dr. Guy was a Member of Council from 1841, during which period he fulfilled the duties of Honorary Secretary (1843-68), Editor of the *Journal* (1852-56), Vice-President (1869-72), and President (1873-75).

"Dr. Guy was a constant and liberal donor to the Library, and the numerous papers which he read before the Society, exceeding in number and variety of subjects those of any other Fellow, as shown in the Jubilee Volume, were of exceptional value. He further testified to his constant interest in the prosperity of the Society by the large number of Fellows whom he introduced to it, and finally by bequeathing to it a legacy of 250*l.* and a reversionary interest of very considerable value."

II.—*Mr. Cornelius Walford, F.I.A., &c.*

The following notice of the death of Mr. Walford, referred to in the President's address, appeared in the *Post Magazine* of 3rd October last:—

"A well-known figure has passed away from our midst. Mr. Cornelius Walford died on 28th September, at his residence, Belsize Park Gardens, Hampstead. For many months he was ailing, and it will be remembered that at the meeting of the Institute of Actuaries on 22nd December, 1884—the last meeting which he attended—he suffered so much from the bleeding from the nostrils, which weakened him, and eventually caused his death, that he could hardly make progress with the reading of his essay on the History of Life Assurance, which was the paper of the evening.

"Mr. Walford possessed, in a marked degree, many invaluable gifts. He had a most retentive memory, and immense capacity for work. As a result, he became a walking cyclopædia, and anyone

requiring information, no matter on what subject, could never do wrong in going to Mr. Walford. He was an easy and fluent speaker, and whatever might be the question under debate, he was ever ready, and without premeditation could marshal an array of facts which always rendered his speeches instructive as well as interesting. He had the pen of a ready writer, and apparently, without effort, would throw off elaborate articles and essays on every description of topic. He wrote copiously for the periodical press, and in him we lose a liberal contributor to these columns. But he also published many useful books, and his name will be handed down to posterity as the author of the great *Insurance Cyclopædia*, that marvel of research and erudition. Unfortunately the stupendous work is only half finished. The difficulty was, not that Mr. Walford's powers or industry failed, but that he did not feel justified in sinking more money in the undertaking. He was already several thousand pounds out of pocket, and on account of his family he would not spend more. We believe the manuscript of the remainder of the work exists in an almost complete state, and if sufficient subscribers were forthcoming, the unpublished volumes could still see the light.

"Mr. Walford was well known in insurance circles all over the world, but his contributions to insurance literature formed only a small part of his writings. He was an active member of many other societies besides the Institute of Actuaries, and one could hardly take up the report of the proceedings of any learned body without meeting with Mr. Walford's name. The last paper of his that we have seen mentioned was one on Railway Unpunctuality, which was read the other day at the meeting of the British Association.

"The late Mr. Walford's library is unique and unrivalled. It includes, probably, almost every book, pamphlet, or paper ever written on any subject connected with insurance, and in its recesses are to be found even multitudes of the casual references to his pet theme, which have appeared in the newspaper press ever since that press has existed. In the arrangement of his library Mr. Walford's methodical habits had full scope. He was never at fault for a moment in finding a book or paper, but could at once place his hands on whatever he might want. It would be a calamity if this huge store should be scattered, and we trust some means may be found of keeping at least the greater part of it together and making it available to those interested in such matters."

III.—*The Migrations of the Population in France.*

A very interesting article by the distinguished economist M. Toussaint Loua appeared in the *Journal de la Société de Statistique de Paris* of March last, dealing with the displacement of the

French population; and this subject is particularly interesting at the present time, as it not only touches upon the question dealt with so ably by Mr. Ravenstein in the paper on the Laws of Migration, read by him before the Statistical Society on the 17th March last, and published in the June number of the *Journal*, but it has a distinct bearing upon it.

M. Loua prefaces his observations by remarking that since the year 1870 the French population, by its own natural growth, that is to say by the excess of births over deaths, has only increased to the extent of about 100,000 souls annually, and of about 150,000 if we include the aliens who have made France the country of their adoption. The non-progress of the French population appears to be an established fact, and although, as M. Loua says, it is one greatly to be deplored, it is not his intention so much to enlarge upon this peculiarity in the French population, the more striking when it is considered how rapid has been the increase in the population of the neighbouring countries, the United Kingdom, Germany, and Italy for example, as to endeavour to throw some light upon the question of the displacement of the population itself, for it has been generally admitted that the greater part of French territory is daily being drained of its population, while certain more favoured regions in France are becoming more and more densely populated, to the great detriment of the natural equilibrium. This is a subject of considerable importance, and one which calls for some special comment, although no one has hitherto been ignorant of the fact that in France as elsewhere there has been a great displacement of the population owing to vast numbers voluntarily quitting places in which they had long been established, and migrating to districts already densely populated. There can be no question as to the causes which have impelled so many persons to this course; in most cases it is the desire to improve their social and material well-being, and to assure to themselves and those dependent upon them a brighter future than any they could reasonably hope for in their old homes. This interesting phenomenon has from time to time been touched upon by many able economists and statisticians, but the subject has appeared to M. Loua to be of such vast importance, as to call for a more exhaustive and detailed examination than any it has yet received at the hands of French writers. He observes that having devoted considerable care and attention to this particular phase of the population question, he is induced to publish the result of his inquiries, as he is of opinion that the question cannot fail to be one of the greatest interest not only to the economist and the statistician of his own country, but to the world generally.

He says, "Looking at the results of the last two census enumerations, it will be found that the total increase in the French population during the five years intervening between the two last census enumerations has amounted to as much as 766,260 persons, and this result has been attained by an increase of 945,643 inhabitants in fifty-three departments, and a diminution in the number of inhabitants of thirty-four departments to the extent of 179,383. On the other hand, if we only take into consideration

those towns, to the number of forty-seven, which have each an aggregate population exceeding 30,000, it will be found that in the case of forty-one there has been an increase of 568,568 persons, while the remaining six have exhibited a falling off in their population to the extent of 6,669, thus giving a total augmentation of 561,869 persons for the whole of these forty-seven towns.

"The total net gain to the French population may therefore be distributed as follows :—

		Per cent.
Increase in 47 principal towns	561,869	or 73
„ other parts of the country....	204.391	„ 27
Total.....	766,260	100

"We see therefore that the principal towns in France count for about three-quarters in the general increase in the aggregate population, while the rest of the country only contributes to the extent of a little more than a quarter. This fact in itself is sufficient to show that in the increase of the French population there is a tendency to a decided concentration in large towns, at the expense of the greater portion of the territory, which it is greatly to be feared is rapidly becoming depopulated.

"It is the object of the present paper to study very minutely this question of concentration, and to endeavour to gauge its intensity. It must be remembered that a population can only increase in two ways—by its own natural growth, that is by the excess of births over deaths, and by migration, that is to say, by the excess of immigration over emigration. The first of these two movements may be considered as *natural*, in contradistinction to the second, which is purely *artificial*. Having once accepted these definitions, it may not be uninteresting to examine how far these two movements enter into the general augmentation of the population, and to study in what degree their relative proportions have been modified by time.

"Taking first, the aggregate population, we find that on the 31st December, 1876, the date of the last census enumeration but one, the number amounted to 36,905,788. On the other hand, the returns show that during the five subsequent years the births exceeded the deaths by 506,977, so that from this cause alone France should have exhibited on the 31st December, 1881, an augmentation of 506,977 souls ; whereas the census enumeration at the latter date showed that there were then living in the country 37,672,048 persons, an excess of 259,283 over the natural increase. This excess can only be accounted for in one way, that is by the influx of immigrants.

"We have shown then what has been the total increase due to the excess of births over deaths, and of immigration over emigration in the total population of France, but what is also of considerable importance is to analyse these figures, and to show how each department in the country has been affected by these two distinct movements, and with this object in view the following table has been prepared :—

Departments.	Quinquennial Period, 1876-81.						
	Population in 1876.	Total Excess of		Population in 1881.		Increment.	Decrement
		Births, 1876-81.	Deaths, 1876-81.	Calculated according to Natural Increase or Decrease.	According to Census.		
Ain	365,462	1,641	—	367,103	363,472	—	3,631
Aisne	560,427	3,956	—	564,383	556,891	—	7,492
Allier	405,783	16,363	—	422,146	416,759	—	5,387
Alpes (Basses)	136,166	—	834	135,332	131,918	—	3,414
Alpes (Hautes)	119,094	979	—	120,073	121,787	1,714	—
Alpes Maritimes	203,604	1,419	—	205,023	226,621	21,598	—
Ardèche	384,378	4,282	—	388,660	376,867	—	11,793
Ardennes	326,782	5,249	—	332,031	333,675	1,644	—
Ariège	244,795	3,491	—	248,286	240,601	—	7,685
Aube	255,217	—	4,036	251,181	255,326	4,145	—
Aude	300,065	3,416	—	303,481	327,942	24,461	—
Aveyron	413,826	15,982	—	429,808	415,075	—	14,733
Bouches du Rhône	556,379	—	3,778	552,601	589,028	36,427	—
Calvados	450,220	—	5,472	444,748	439,830	—	4,918
Cantal	231,086	4,840	—	235,926	236,190	264	—
Charente	373,950	3,041	—	376,991	370,822	—	6,169
Charente Inférieure	465,628	6,174	—	471,802	466,416	—	5,386
Cher	345,613	14,504	—	360,117	351,405	—	8,712
Corrèze	311,525	12,554	—	324,079	317,066	—	7,013
Corse	262,701	6,372	—	269,073	272,639	3,566	—
Côte d'Or	377,663	—	1,115	376,548	382,819	6,271	—
Côtes du Nord	630,957	22,687	—	653,644	627,585	—	26,059
Creuse	278,423	8,486	—	286,909	278,782	—	8,127
Dordogne	489,848	13,313	—	503,161	495,037	—	8,124
Doubs	306,094	5,401	—	311,495	310,827	—	668
Drôme	321,756	—	2,341	319,415	313,763	—	5,652
Eure	373,629	—	8,348	365,281	364,291	—	990
Eure et Loir	283,075	—	845	282,230	280,097	—	2,133
Finistère	666,106	25,035	—	691,141	681,564	—	9,577
Gard	423,804	2,862	—	426,666	415,629	—	11,037
Garonne (Haute)	477,730	447	—	478,177	478,009	—	168
Gers	283,546	—	4,824	278,722	281,532	2,810	—
Gironde	735,242	837	—	736,079	748,703	12,624	—
Hérault	445,053	—	1,463	443,590	441,527	—	2,063
Ille et Vilaine	602,712	16,150	—	618 862	615,480	—	3,382
Indre	281,248	10,504	—	291,752	287,705	—	4,047
Indre et Loire	324,875	625	—	325,500	329,160	3,660	—
Isère	581,099	2,304	—	583,403	580,271	—	3,132
Jura	288,823	2,566	—	291,389	285,263	—	6,126
Landes	303,508	13,221	—	316,729	301,143	—	15,586
Loir et Cher	272,634	4,904	—	277,538	275,713	—	1,825
Loire	590,613	18,231	—	608,844	599,836	—	9,008
Loire (Haute)	313,721	9,061	—	322,782	316,461	—	6,321
Loire Inférieure	612,972	16,326	—	629,298	625,625	—	3,673
Loiret	360,903	8,503	—	369,406	368,526	—	880
Lot	276,512	—	418	276,094	280,269	4,175	—
Lot et Garonne	316,920	—	7,109	309,811	312,081	2,270	—
Lozère	138,319	6,182	—	144,501	143,565	—	936
Maine et Loire	517,258	—	1,724	515,534	523,491	7,957	—
Manche	539,910	—	1,526	538,384	526,377	—	12,007

Departments.	Quinquennial Period, 1876-81. Population in 1876.	Total Excess of Births, 1876-81.	Total Excess of Deaths, 1876-81.	Population in 1881. Calculated according to Natural Increase or Decrease.	Population in 1881. According to Census.	Increment.	Decrement.
Marne	407,780	3,831	—	411,611	421,800	10,189	—
Marne (Haute)	252,448	956	—	253,404	254,876	1,472	—
Mayenne	351,933	2,721	—	354,654	344,881	—	9,773
Meurthe-et-Moselle	404,609	2,743	—	407,352	419,317	11,965	—
Meuse	294,054	454	—	294,508	289,861	—	4,647
Morbihan	506,573	24,215	—	530,788	521,614	—	9,174
Nièvre	346,822	8,926	—	355,748	347,576	—	8,172
Nord	1,519,585	74,381	—	1,593,966	1,603,259	9,293	—
Oise	401,618	—	1,146	400,472	404,555	4,083	—
Orne	392,526	—	6,813	385,713	376,126	—	9,587
Pas-de-Calais	793,140	31,503	—	824,643	819,022	—	5,621
Puy-du-Dôme	570,207	2,396	—	572,603	566,064	—	6,539
Pyrénées (Basses)	431,525	9,984	—	441,509	434,366	—	7,143
Pyrénées (Hautes)	238,037	2,118	—	240,155	236,474	—	3,681
Pyrénées-Orientales	197,940	5,285	—	203,225	208,855	5,630	—
Rhin (Haut) [Belfort]	68,600	2,334	—	70,934	74,244	3,310	—
Rhône	705,131	—	1,955	703,176	741,470	38,294	—
Saône (Haute)	304,052	3,056	—	307,108	295,905	—	11,203
Saône et Loire	614,309	21,445	—	635,754	625,589	—	10,165
Sarthe	446,339	—	4,992	441,247	438,917	—	2,330
Savoie	268,361	3,625	—	271,986	266,438	—	5,548
Savoie (Haute)	273,801	6,437	—	280,238	274,087	—	6,151
Seine	2,410,849	18,445	—	2,429,294	2,799,329	370,035	—
Seine Inférieure	798,414	8,747	—	807,161	814,068	6,907	—
Seine-et-Marne	347,323	82	—	347,405	348,991	1,586	—
Seine-et-Oise	561,990	—	5,471	556,519	577,798	21,279	—
Sèvres (Deux)	336,655	8,827	—	345,482	350,103	4,621	—
Somme	556,641	—	830	555,811	550,837	—	4,974
Tarn	359,232	4,776	—	364,008	359,223	—	4,785
Tarn et Garonne	221,364	—	3,455	217,909	217,056	—	853
Var	295,763	—	3,610	292,153	288,577	—	3,576
Vaucluse	255,703	—	4,401	251,302	244,149	—	7,173
Vendée	411,781	15,673	—	427,454	421,642	—	5,812
Vienne	330,916	9,238	—	340,154	340,295	141	—
Vienne (Haute)	336,061	15,904	—	351,965	349,332	—	2,633
Vosges	407,082	5,024	—	412,106	406,862	—	5,244
Yonne	359,070	—	1,651	357,419	357,029	—	390
France	36,905,788	585,154	78,157	37,412,765	37,672,048	622,391	363,108
		+ 506,997				+ 259,283	
Urban population	11,977,396	+ 38,500		12,015,876	13,096,542	+1,080,666	
Rural „	24,928,392	+ 468,497		25,396,889	24,575,506	− 821,383	

"This table shows very clearly that out of the whole of these eighty-nine departments of France, there are only twenty-eight in which there has been any absolute gain as regards the numbers of the population, while in fifty-nine there has been an actual loss.

The aggregate gain to the more favoured departments is represented by a total of 622,391, and it is a significant fact that in this gain one department alone, that of the Seine, counts for 370,035, that is more than half. The department coming next is the Rhône, with an increase of 38,294; the Bouches-du-Rhône then follows, with 36,427; the Aude, with 26,461; the Alpes Maritimes, 24,461; Seine et Oise, 21,279; Gironde, 16,624; Meurthe-et-Moselle, 11,965; and the Marne, with 10,189. As regards the other departments which have benefited by an increase in their respective populations, the actual gain varies from 100 to over 10,000.

"Coming next to those fifty-nine departments in which we find that there has been a falling off in their respective populations, the loss is represented by a total of 363,168 persons, who it may be taken have gone to swell the numbers inhabiting the more favoured districts. The department which has suffered the most severely is the Côtes du Nord, which has experienced a loss of 26,059 inhabitants, while the Landes, Ardèche, Gard, Manche, Saône et Loire, and the Haute Saône all show a sensible diminution in their respective populations, the loss varying from 10,000 to 15,000 persons.

"One fact is clearly evidenced by these displacements of the population, namely, that the movement of concentration is in favour of a third of the French departments, at the expense of the remaining two-thirds, and to a certain extent of foreign countries. The favoured portion of the French territory has in fact benefited during the five years immediately preceding the last census enumeration to the extent of 622,391 inhabitants, of whom 363,108 have been drawn from sixty-three other departments, and 259,283 from abroad. Finally, one department alone, the Seine, has absorbed 370.035 persons, that is more than half of the total augmentation, from which we may gather that Paris still continues to remain the great centre of attraction, so much so that it may be said, that in France *l'hypertrophie est au cœur, l'anémie aux extrémités.*

"We have pointed out to what extent the foreign element has contributed to the total augmentation of the French population, but the influence exercised by it is fortunately less than that derived from the natural productive forces of the population itself, for example, we find that the natural movement exhibits an increase of 506,977 persons, or 66 per cent., whereas the artificial movement shows a total of 259,283, or 34 per cent. These proportions are very significant, as they clearly indicate that purely artificial causes contribute but a third to the actual development of the French population.

"Although it cannot be said that they are entirely devoid of significance, the migrations which take place from department to department, and even from foreign countries, are by no means so important as the current of the population from the rural districts to the towns. The exodus from the provinces is a subject of the utmost interest and importance, and one which most nearly affects the future of the country itself. It will be unnecessary here to

dwell upon the causes that have influenced this movement, or to endeavour to suggest remedies for their removal, as this question has already received the most able and exhaustive treatment at the hands of the Abbé Tounissoux, in his paper on the desertion of the rural districts; we will therefore merely confine our remarks to a brief statement of facts.

"We find then, according to the returns of the census taken on 31st December, 1876, that the urban population, using the term in its generally accepted sense, as representing the inhabitants of those districts which have each a population exceeding 2,000, amounted to an aggregate of 11,977,396, or about a third of the total population of the country, and the published returns show that this population in the quinquennial period comprised between the census enumerations of 1876 and 1881 had increased to 13,096,142, an excess of 1,080,666 persons.

"When it is considered that in a vast number of departments sanitary conditions of the towns leave much to be desired, and in the majority of cases there is generally observable an excess of deaths over births, it is evident that without an influx of immigration many towns would exhibit a decided tendency to depopulation, but it must be understood that there are certain exceptions to this rule, as in many more or less important centres there is on the contrary an excess of births over deaths, and this is particularly noticeable in Paris.

"The fact, however, remains that during the five years ending 1881, this enormous urban population had only increased by its own natural growth to the extent of 38,480, a total in itself insignificant, but which would bring the aggregate up to 12,015,876 on 31st December, 1881, whereas the census enumeration at that date showed that the actual number of the urban population then existing amounted to 13,096,142, whence it necessarily follows that the difference must have been made up by the influx of the rural and foreign elements. On the other hand, the rural population, whose natural increment is greatly in excess of that of the urban population, should, judging by the excess of births over deaths, which amounted during the same period to 468,497, have increased from 24,928,392 to 25,396,889, but the returns show a total only of 24,575,506, thus proving that great towns and centres of industry have been the goal to which 821,383 migrants from the rural districts have wended their steps, impelled to this course perhaps by the prospects of improving their material and social condition, but in many cases discovering, when too late, that the conditions of life were far easier in the places they had deserted than in the towns to which they had repaired.

"In connection with this subject of the current of migration from the rural to the urban districts, it may not be out of place here to call attention to the fact that this migration does not always entirely account for the increase in the urban population, for it must be remembered that at each fresh census enumeration a different view is taken of what really constitutes an urban population; in this category being comprised the inhabitants of districts each numbering sometimes 1,800, sometimes 1,900, and occasionally

even 2,000 persons. But as it may happen also that certain towns pass into the category of rural districts, this fact would modify but in a very slight degree the results to which we have directed attention.

"But to return to our argument; dealing on the same principle with the urban as we have done with the total population of France, that is, to show the proportion of its natural growth, and the increase it derives from an influx of immigration, we arrive at the following results:—

Natural growth of urban population	38,480	or 3·4	per cent.
Artificial „	1,080,666	„ 96·6	„
	1,119,146	100	

"It would be impossible to demonstrate more clearly than by the above proportions how essentially artificial as it may be termed is the increase of the town population of France, and as regards the rural districts they are so completely drained by emigration that for a population to remain even stationary it would be necessary for its natural growth to be increased at least twofold.

"Having so far studied the question of the urban population of France taken as a whole, it may not be uninteresting to devote some attention to the individual towns; but as it would be impossible to take each one separately, we will merely consider those forty-seven towns to which we have already alluded, and which have each an aggregate population exceeding 30,000 souls. A reference to the following table will show the increase in their population, both natural and artificial enumerations, during the quinquennial period comprised between the dates of the two last censuses:—

Towns.	Population in 1876.	Natural Movement.		Artificial Movement.		Total Increase.	Total Decrease.	Population in 1881.
		Excess of Births.	Excess of Deaths.	Gain.	Loss.			
Paris	1,988,806	23,177	—	257,040	—	280,217	—	2,269,023
Lyon	342,815	—	2,922	36,720	—	33,798	—	376,613
Marseille	318,868	—	1,983	43,214	—	41,231	—	360,099
Bordeaux	215,140	—	2,739	8,904	—	6,165	—	221,305
Lille	162,775	6,481	—	8,888	—	15,369	—	178,144
Toulouse	131,642	—	2,221	10,868	—	8,647	—	140,289
Nantes	122,247	—	2,429	4,501	—	2,072	—	124,319
Saint-Étienne	126,019	3,465	—	—	5,671	—	2,206	123,813
Rouen	104,902	—	2,865	3,869	—	1,004	—	105,906
Le Havre	92,068	766	—	13,033	—	13,799	—	105,867
Reims	81,328	1,676	—	10,819	—	12,495	—	93,823
Roubaix	83,661	6,215	—	1,881	—	8,096	—	91,757
Amiens	66,896	—	152	7,426	—	7,274	—	74,170
Nancy	66,303	—	213	7,135	—	6,922	—	73,225
Toulon	70,509	—	997	591	—	—	406	70,103
Angers	56,846	—	1,894	13,097	—	11,203	—	68,049
Nice	53,397	681	—	12,201	—	12,882	—	66,279
Brest	66,828	—	1,688	970	—	—	718	66,110

Towns.	Population in 1876.	Natural Movement.		Artificial Movement.		Total Increase.	Total Decrease.	Population in 1881.
		Excess of Births.	Excess of Deaths	Gain.	Loss			
Limoges	59,011	618	—	4,136	—	4,754	—	63,765
Nimes	63,001	—	1,134	1,685	—	551	—	63,552
Rennes	57,177	—	1,380	5,177	—	3,797	—	60,974
Orleans	52,157	—	750	5,857	—	5,107	—	57,264
Besançon	52,404	—	575	3,238	—	2,663	—	55,067
Montpellier	55,258	—	1,395	2,142	—	747	—	56,005
Dijon	47,939	106	—	7,408	—	7,514	—	55,453
Le Mans	50,175	—	1,704	6,876	—	5,172	—	55,347
Tours	48,325	—	1,071	4,955	—	3,884	—	52,209
Tourcoing	48,634	2,859	—	402	—	3,261	—	51,895
Grenoble	45,426	—	312	6,257	—	5,945	—	51,371
Versailles	49,847	—	1,485	—	38	—	1,523	48,324
Troyes	41,275	—	679	5,471	—	4,792	—	46,067
Saint-Quentin	38,924	728	—	6,186	—	6,914	—	45,838
Boulogne-sur-Mer	39,715	980	—	3,787	—	4,767	—	44,482
Saint Denis	34,908	—	1,098	10,085	—	8,987	—	43,895
Clermont	41,772	—	1,703	2,964	—	1,261	—	43,033
Béziers	38,227	—	265	4,953	—	4,688	—	42,915
Caen	41,181	—	1,862	2,189	—	327	—	41,508
Bourges	35,785	348	—	4,084	—	4,432	—	40,217
Lorient	35,165	—	152	2,799	—	2,647	—	37,812
Avignon	38,008	—	1,240	889	—	—	351	37,657
Dunkerque	35,071	1,735	—	522	—	2,257	—	37,328
Poitiers	33,253	—	66	3,023	—	2,957	—	36,210
Cherbourg	37,186	—	953	—	542	—	1,495	35,691
Cette	28,690	423	—	6,404	—	6,827	—	35,517
St. Pierre-les-Calais	25,683	1,651	—	6,056	—	7,707	—	33,390
Angoulême	30,513	196	—	1,858	—	2,054	—	32,567
Perpignan	28,353	—	93	3,475	—	3,382	—	31,735
	5,386,373	52,105	38,020	554,035	6,251	568,568	6,699	5,948,242
Increase	—	+ 14,085 2·5		+ 547,784 97·5		+ 561,869 100·0		

"The most striking fact indicated by the above table is that taking the total augmentation in the population of these forty-seven towns, while the natural growth is represented simply by a proportion of 2·5 per cent., the artificial increase counts for as much as 97·5 per cent.; and this is the more noteworthy when we consider that taking the urban population generally, artificial causes have only contributed to the extent of 96·6 per cent. We are therefore forced to the conclusion that it is in these forty-seven principal towns that migration acts with the greatest intensity. In other words it may be said that the total artificial increase in the urban population, which we have shown amounted during the quinquennial period 1876-81 to 1,080,666 persons, is absorbed to the extent of more than half by the forty-seven towns we have particularised—the exact proportion being in the ratio of 52 per cent. And it may be added that the proportion would be even greater if we were to eliminate from the urban population the inhabitants of those rural districts which have been promoted to

the rank of towns owing to the difference of opinion existing as to what actually constitutes a town in a numerical point of view.

"There are one or two other striking facts brought out by this table, which it may be interesting to notice. First, we find that taking the whole of these forty-seven towns, there are only seventeen in which an excess of births over deaths is noticeable, and these are as follows: Paris, Lille, Saint Étienne, Havre, Reims, Roubaix, Nice, Limoges, Dijon, Tourcoing, Saint Quentin, Boulogne-sur-Mer, Bourges, Dunkerque, Cette, Saint Pierre-les-Calais, and Angoûleme; and out of all these it is only in Paris, Lille, Roubaix, Tourcoing, and Saint Étienne that this increase assumes any considerable proportions.

"The remaining thirty towns, on the contrary, exhibit an excess of deaths over births more or less marked. Taking however the table as a whole, it will be seen that there is a decided preponderance of births over deaths, although the actual proportion, as we have pointed out, is somewhat insignificant.

"Coming next to the question of the reception and absorption of migrants, it will be found that out of these forty-seven towns, forty-four have been the gainers in this respect, and they have benefited to the extent of 554,035 souls. There are only three which show an excess of emigration, and which may be termed the towns of dispersion. They are as follows: Versailles, which has suffered a loss of only 38 inhabitants; Cherbourg, of 542; and Saint Étienne, which has been drained of 5,671 inhabitants, and is consequently, as regards her population, in a worse position than she was five years before; although the proportion of the excess of births over deaths in this particular town has been by no means inconsiderable.

"Versailles and Cherbourg are in the same position as Toulon, Brest, and Avignon, but in the two former the natural and artificial causes are more or less equally balanced, whereas in the latter towns the movement of migration has not been sufficiently pronounced to compensate for the excess of deaths.

"We will next endeavour to summarise in the following table the results we have already obtained as regards the artificial development of French towns, a development obtained it is true at the expense of the rural districts, or of foreign countries:—

Period 1876-81.

	Increase.					
	Numbers.			Percentage.		
	Natural.	Artificial.	Total.	Natural.	Artificial.	Total.
Paris	23,177	257,040	280,217	8·3	91·7	100
Other towns	15,303	823,626	838,929	1·8	98·2	100
Urban population	38,480	1,080,666	1,119,146	3·4	96·6	100
France	506,977	259,283	766,260	66·1	33·9	100

"And with a view to showing more clearly the importance of the relative proportions, it would be well to compare the above table with the following, which is identical in character, but which relates to the preceding quinquennial period :—

Period 1872-76.

	Increase.					
	Numbers.			Percentage.		
	Natural.	Artificial.	Total.	Natural.	Artificial.	Total.
Paris	47,210	89,804	137,014	34·4	65·6	100
Other towns	70,457	535,026	605,483	11·6	88·4	100
Urban population	117,667	624,830	742,497	15·8	84·2	100
France	601,287	201,580	802,867	75·0	25·0	100

"Comparing these two tables, it will at once be observed how this movement of concentration in large towns, already sufficiently pronounced in the quinquennial period 1872-76, had become accentuated during the period 1876-81. It will be seen that the increase in the aggregate urban population due to the excess of immigration, which in the earlier period amounted to 84 per cent., had risen to as much as 97 per cent., while taking the movement of the population in Paris alone, the facts which are brought out by these tables are even more surprising, showing as they do what an important factor artificial causes have become, for we find that while in the earlier period these causes only contributed to the extent of about 66 per cent., or roughly speaking about two-thirds, at the date of the last census enumeration they counted for more than 91 per cent., or more than nine-tenths of the aggregate increase.

"As regards the rural population, in which there is always observable a steady decrease consequent upon the constant flow of emigration, we can trace very clearly to what extent this efflux has affected it, as it appears that while during the quinquennial period 1872-76, it suffered a loss of 423,250 persons, this number during the period 1876-81 had increased to the enormous total of 821,383, so that in the short space of five years rural emigration had almost doubled itself.

"If then this current of emigration from the rural districts is in the future to increase in the same proportion as it has done in the past, the consequences must necessarily prove most disastrous, although, as it may be urged, the rural population of France, which comprises more than two-thirds of the actual population of the country, can certainly afford to bear the strain of a moderate current of emigration. If then the present rate of migration from the rural districts is to be maintained, it can only be productive of one result,

that of seriously crippling the agricultural industries, as there is unfortunately no counter current of immigration to compensate for the losses sustained by the constant drain.

"And finally, taking the excess of foreign immigration in the entire country, it will be observed that this excess, which in the earlier period only amounted to 201,580, rose in the later period to 259,283. The actual proportion to the total increase of the population of the country, which in the earlier period was at the rate of 25 per cent., has since risen to about 34 per cent., that is to say instead of counting for a quarter in the total augmentation, it has now exceeded a third. And this fact finds its confirmation in the augmentation of the alien population residing in France; for it appears according to the last two census enumerations that there were 801,784 foreigners living in the country in 1876, and in 1881 this number had increased to over a million.

"This foreign element is composed of persons of all nationalities, but by far the greater number are drawn from the neighbouring countries, such for instance as Belgium, Germany, Italy, Switzerland, Spain, and England. On this point we cannot do better than refer to the very excellent information published in the last volume of the census returns of 1881. It is here we find that the largest foreign colony is composed of Belgians, the actual number amounting to 432,265, and this number appears to remain almost stationary. The Italians, on the contrary, appear to be greatly on the increase in France, and are found established in every part of the country. As a proof of their ever increasing numbers, it may be mentioned that, while twenty years ago there were only 76,000 living in France, there are now over 241,000 inhabiting the country. The Teutonic race comes next, with an aggregate of 81,986, and then follow the Spaniards, Swiss, and English.

"Of the 432,265 Belgians established in France, 422,764, or about 98 per cent., were returned at the last census as inhabiting thirteen departments. The actual distribution was as follows:—

Departments.	Number.	Departments.	Number.
Nord	270,351	Meurthe-et-Moselle	6,120
Seine	55,938	Seine-et-Marne	4,345
Ardennes	31,451	Somme	3,066
Pas de Calais	12,198	Meuse	3,060
Oise	11'197	Seine Inférieure	1,987
Marne	8,285		
Aisne	7,457		422,764
Seine-et-Oise	7,309		

"The subjects of the German Empire are represented to the extent of 81,986, and they appear to be distributed over a far more extended area than the Belgians; but as will be seen by a reference to the following table, it is only in the following fourteen departments that the aggregate population exceeds 1,000 persons:—

Departments.	Number.
Seine	35,954
Meurthe-et-Moselle	12,132
Vosges	2,583
Meuse	2,220
Seine-et-Oise	2,032
Marne	1,950
Haut Rhin	1,934
Seine Inférieure	1,678
Rhône	1,518
Alpes Maritimes	1,516
Doubs	1,414
Nord	1,386
Haute Marne	1,274
Aube	1,188
	68,779 or 84 per cent.

"Italians, who were formerly to be found in but very few departments, are now gradually spreading over the greater part of French territory. In their case, however, there has always been observable one marked peculiarity, that is the disinclination to settle in any great numbers far from the Italian frontier, as the following table will show:—

Departments.	Number.	Departments.	Number
Bouches du Rhône	66,663	Savoie	6,216
Alpes Maritimes	34,976	Isère	5,721
Seine	26,148	Hérault	3,772
Var	21,363	Hautes Alpes	3,705
Corse	15,032	Gard	3,015
Rhône	9,253	Loire	2,842

"And the aggregate Italian population is considerably below 2,000 in the Basses Alps, Doubs, Haute Marne, and the Haute Saône, while in the departments of Ain, Aisne, Côte d'Or, Jura, Meurthe-et-Moselle, Meuse, Pas de Calais, Saône-et-Loire, and Vaucluse, it does not exceed 1,000. The twenty-six departments enumerated above comprise more than nine-tenths of this important colony.

"The destination of Spanish emigrants appears to be chiefly the department of the Basses Pyrénées, and it is only in ten others that the Spanish colony numbers more than 1,000 inhabitants. A reference to the following table will show their principal distribution:—

Departments.	Number.	Departments.	Number.
Basses Pyrénées	14,587	Seine	4,046
Pyrénées Orientales	10,474	Hérault	3,786
Aude	8,029	Haut Garonne	3,707
Gard	6,130	Hautes Pyrénées	2,645
Gironde	5,115	Bouches du Rhône	1,931

"As regards the Swiss, they are to be found more or less distri-

buted throughout the length and breadth of France, but they also appear to have a preference for particular districts, and in their case it is for the following eleven departments :—

Departments.	Number.
Seine	23,422
Doubs	9,082
Rhône	4,058
Bouches du Rhône	2,885
Haut Savoie	2,808
Seine et Oise	2,063
Alpes Maritimes	1,774
Ain	1,706
Seine Inférieure	1,461
Haut Rhin	1,381
Seine et Marne	1,321
	51,961 or 78 per cent.

" Coming next to the English, we find, particularly in the holiday season, representatives of this race in all parts of the country, but it is only in seven departments that they appear to make any lengthened stay. These departments, according to the last census returns, were as follows :—

Departments.	Number.
Seine	12,636
Pas de Calais	5,704
Alpes Maritimes	2,347
Seine Inférieure	1,762
Nord	1,640
Basses Pyrénées	1,634
Oise	1,188

" By far the greater number of foreigners of American, Russian, Scandinavian, Austro-Hungarian, Roumanian, Asiatic, and other nationalities not particularly distinguished, are established in Paris. It is also here, as well as in Marseilles, that the largest proportion of the representatives of the Greek and Turkish element is to be found. It will be seen then from the above that the majority of the foreigners who have migrated to France prefer to settle in close proximity to the frontier, the department of the Seine, for reasons perfectly intelligible, forming the only exception to this rule. In this department alone it has been shown in the returns of the last census enumeration that there are not less than 193,046 persons of foreign extraction.

" It must be patent to everyone that this question of migration is one of the greatest importance, and we have shown to what extent the movements from one department to another, from the urban to rural districts, and even from foreign countries to the principal commercial and industrial centres of France, have been carried on. In considering this subject, we have been much struck with the numerous points of similarity between these migrations and the

military operation known as changing the garrison. A regiment leaves one town to garrison another, or even several other towns, and it is evident that in estimating the effect of these changes upon the respective populations of the towns in question, we can only proceed by first taking into consideration their actual normal strength; and it is much the same with the displacement of the population, the localities left by migrants are the losers by so many inhabitants, but other localities are benefited to a corresponding degree.

"We have endeavoured to offer a graphic representation of this interesting phenomenon by the aid of two diagrams, which space will unfortunately not admit of our reproducing here. These diagrams, constructed it may be observed on precisely the same principle, relate to two distinct periods—the one comprised between the years 1872-76, and the other the quinquennial period 1876-81.

"Comparing these two diagrams, the peculiarity that strikes us in the first is the concentration of the population in the eastern departments, influenced to a very great extent by the current of emigration from Alsace Lorraine, and the tendency to concentration in important centres such as Paris, Lyons, Saint Étienne, and Bordeaux.

"In the second diagram we see that the current of migration towards the east shows a decided diminution, and the movement of concentration, chiefly in Paris and its environs, greatly accentuated. In this diagram Paris predominates; and this is not surprising when we reflect that the department of the Seine has alone gained in the quinquennial period 1876-81 an accession of 370,000 inhabitants, while the other twenty-five favoured departments have only together benefited to the extent of 252,000. And here we may observe that the gain of 620,000 inhabitants to these twenty-six departments resulted from an influx of 259,000 foreigners, and 363,000 persons from other districts in France which are becoming depopulated.

"In considering this question of migration, one fact must be borne in mind, namely, that the relative influence of these displacements have only a greater or lesser significance according to the importance or otherwise of that section of the population over which it is exercised. For example, the rural population, which comprises about two-thirds of the total population of the country, can afford to lose by emigration such vast numbers without affecting it to any appreciable extent, while this constant stream of emigration will infuse fresh life into the populations of the towns, whose numbers are much inferior to those inhabiting the rural districts.

"The same remark equally applies to the total urban immigration compared with that of Paris or any other large centre of concentration. The influence of this immigration will increase in proportion as the population profiting by it decreases in numbers. These considerations have led us to compare the actual displacements to which we have already alluded, with the population affected by them, and the following table will show the result of our calculations for the last two quinquennial periods:—

	Period, 1872-76.			Period, 1876-81.		
	Population in 1876.	Increase (+) or Decrease (−)	Proportion to every 100 Inhabitants	Population in 1881.	Increase (+) or Decrease (−)	Proportion to every 100 Inhabitants
Paris	1,852,792	+ 89,804	4·8	1,988,806	+ 257,040	12·9
Urban population	11,234,899	+ 624,830	5·5	11,977,396	+ 1,080,666	9·0
Rural ,,	24,868,022	− 423,250	1·7	24,928,392	− 822,383	3·3
France.....	36,102,921	+ 201,580	0·55	36,905,788	+ 259,283	0·70

"From the above it will be seen that from one period to the other Parisian immigration has almost trebled itself, while as regards the emigration from the rural districts, it has just doubled, and this phenomenon of the displacement of the population has never we think attained in so short a time such a vast importance.

"In the majority of the most important industrial and commercial centres it will be found that the influx of foreigners of every nationality is greatly on the increase; already in Paris even the Parisians properly so-called are comparatively overwhelmed in the ever increasing stream of provincials and foreigners. These latter now form two-thirds of the actual population of the capital, while the Parisians, and even under this head we must include the children of provincials and foreigners born in the capital, only comprise one-third.

"Of all the countries of Europe France is the one where there is relatively the greatest number of aliens. At the present day it is estimated that there are considerably over a million foreigners living in the country, and in twenty years' time there will probably be two millions and perhaps more; while in the very heart of France, in Paris, they are ousting Frenchmen themselves. It will we think be agreed that this is a very serious matter, and fraught with the gravest consequences, not only in a political but in a moral point of view, for it resolves itself into a question, according to Paul Leroy Beaulieu, of the preservation of the French national character and the maintenance of its type. France has always, and more particularly since the revolution, laboured less for herself than for the human race at large, and although this may be a most admirable mission, the cost at which it has been accomplished is indeed a heavy one. The time has surely come when an effort should be made to at least modify this spirit of cosmopolitanism; before thinking of other nations it is surely only right and just that we should study our own country, and we must endeavour to accomplish this even at the risk of laying ourselves open to the charge of egoism."

IV.—*Statistics of Australasian Colonies.*

The following statistical return, showing the relative positions and aggregate importance of the Australasian colonies at the close of the year 1884, has been received from the Agent-General in

Australasian Colonies.—*Statistical Return showing the Relative Positions and*

	Name of Colony.			
	New South Wales.	Victoria.	South Australia.	Queensland.
Area in square miles	310,700	7,884	903,690[3]	668,497
Estimated population at the middle of 1884	895,533	946,100	307,947	298,694
Revenue of 1884	7,117,592*l.*	5,934,687*l.*	2,024,928*l.*	2,673,554*l.*
Revenue per head of population	7*l.* 18*s.* 11*d.*	6*l.* 5*s.* 5*d.*	6*l.* 11*s.* 6*d.*	8*l.* 19*s.*
Proportion of revenue of 1884 raised by taxation	2,152,854*l.*	2,318,520*l.*	563,841*l.*	1,090,445*l.*
Rate of taxation per head of population	2*l.* 8*s.*	2*l.* 9*s.*	1*l.* 16*s.* 7*d.*	3*l.* 13*s.*
Value of imports for 1884	22,826,985*l.*	19,201,633*l.*	5,749,353*l.*	6,381,976*l.*
Value of imports per head of the population	25*l.* 9*s.* 9*d.*	20*l.* 5*s.* 11*d.*	18*l.* 13*s.* 4*d.*	21*l.* 7*s.* 4*d.*
Value of exports for 1884	18,251,506*l.*	16,050,465*l.*	6,623,704*l.*	4,673,864*l.*
Value of exports per head of the population	20*l.* 7*s.* 7*d.*	16*l.* 19*s.* 3*d.*	21*l.* 10*s.* 1*d.*	15*l.* 12*s.* 11*d.*
Total value of trade, imports and exports	41,078,491*l.*	35,252,098*l.*	12,373,057*l.*	11,055,840*l.*
Value of trade per head of the population	45*l.* 17*s.* 4*d.*	37*l.* 5*s.* 2*d.*	40*l.* 3*s.* 5*d.*	37*l.* –*s.* 3*d.*
Miles of railway open, 31st December, 1884	1,688[1]	1,663	1,059	1,207
Miles of railway in course of construction, 31 Dec., 1884	442	32	263	746½
Miles of telegraph lines open, 31st December, 1884	9,755	4,020	5,230	6,979
Miles of telegraph wire open, 31st December, 1884	18,681	8,055	7,833	11,300
Miles of telegraph in course of construction, 31st Dec., 1884				
Length of lines	386	36	49	295
,, wire	658	81	72	336
Number of acres under crop in 1884	852,017	2,323,493[2]	2,785,490[4]	187,381
Number of horses in 1884	330,603	293,846	168,420	253,116
,, cattle ,,	1,336,329	1,287,945	389,726	4,266,172
,, sheep ,,	30,379,871	10,637,412	6,696,406	9,308,911
,, pigs ,,	211,656	234,347	163,807	51,796
Estimated population on 31st December, 1884	921,268	961,276	312,781	309,913
Public debt on 31st Dec., 1884	24,601,959*l.*	27,526,667*l.*	15,473,800*l.*	16,419,850*l.*
Rate of indebtedness per head of population	26*l.* 14*s.* 2*d.*	28*l.* 12*s.* 9*d.*	49*l.* 9*s.* 5*d.*	52*l.* 19*s.* 8*d.*

[1] Includes a private line 45 miles in length; also 35 miles of tramway.
[2] ,, land in fallow, 183,197 acres, and 332,859 acres under green forage.
[3] ,, northern territory, 523,620 square miles.
[4] ,, 450,536 acres in fallow.

London of New South Wales, and is given with reference to a similar return for the year 1879, to be found at pp. 698 and 699 of vol. xliii of the *Journal* (1880).

Aggregate Importance of the Australasian Colonies, at the close of the Year 1884.

Name of Colony.					
Western Australia.	Total.	Tasmania.	New Zealand.	Total for the Australasian Colonies.	
1,060,000	3,030,771	26,215	104,403	3,161,389	Area in square miles
32,329	2,480,603	128,380	552,590[6]	3,161,573	Estimated population at the middle of 1884
290,319*l.*	18,041,080*l.*	549,262*l.*	3,707,488*l.*	22,297,830*l.*	Revenue of 1884
8*l.* 19*s.* 7*d.*	7*l.* 5*s.* 5*d.*	4*l.* 5*s.* 3*d.*	6*l.* 14*s.* 2*d.*	7*l.* 1*s.*	Revenue per head of population
127,338*l.*	6,252,998*l.*	344,192*l.*	1,869,496*l.*	8,466,686*l.*	Proportion of revenue of 1884 raised by taxation
3*l.* 18*s.* 9*d.*	2*l.* 10*s.* 4*d.*	2*l.* 13*s.* 7*d.*	3*l.* 7*s.* 7*d.*	2*l.* 13*s.* 6*d.*	Rate of taxation per head of population
521,167*l.*	54,681,114*l.*	1,656,118*l.*	7,663,888*l.*	64,001,120*l.*	Value of imports for 1884
16*l.* 2*s.* 5*d.*	22*l.* –*s.* 10*d.*	12*l.* 18*s.*	13*l.* 17*s.* 4*d.*	20*l.* 4*s.* 10*d.*	Value of imports per head of the population
405,693*l.*	46,005,232*l.*	1,475,857*l.*	7,091,667*l.*	54,572,756*l.*	Value of exports for 1884
12*l.* 11*s.*	18*l.* 10*s.* 11*d.*	11*l.* 9*s.* 11*d.*	12*l.* 16*s.* 8*d.*	17*l.* 5*s.* 2*d.*	Value of exports per head of the population
926,860*l.*	100,686,346*l.*	3,131,975*l.*	14,755,555*l.*	118,573,876*l.*	Total value of trade, imports and exports
28*l.* 13*s.* 5*d.*	40*l.* 11*s.* 9*d.*	24*l.* 7*s.* 11*d.*	26*l.* 14*s.*	37*l.* 10*s.*	Value of trade per head of the population
138	5,755	215	1,570[7]	7,540	Miles of railway open, 31st December, 1884
48	1,531½	159	158	1,848½	Miles of railway in course of construction, 31 Dec., 1884
1,885	27,869	1,313[5]	4,264	33,446	Miles of telegraph lines open, 31st December, 1884
1,897	47,766	1,716[5]	10,474	59,956	Miles of telegraph wire open, 31st December, 1884
					Miles of telegraph in course of construction, 31st Dec., 1884
450	1,216	45	99	1,360	Length of lines
450	1,597	—	188	1,785	,, wire
74,930	6,223,311	146,327	1,132,241[8]	7,501,879	Number of acres under crop in 1884
37,111	1,083,096	27,188	161,736[9]	1,272,020	Number of horses in 1884
71,102	7,351,274	128,834	698,637[9]	8,178,745	,, cattle ,,
1,547,061	58,569,661	1,720,027	14,056,266	74,345,954	,, sheep ,,
20,039	681,645	57,303	200,083[9]	939,031	,, pigs ,,
32,958	2,538,196	130,541	564,304[6]	3,233,041	Estimated population on 31st December, 1884
765,000*l.*	84,787,276*l.*	3,202,300*l.*	33,691,022*l.*[10]	121,680,598*l.*	Public debt on 31st Dec., 1884
23*l.* 4*s.* 2*d.*	33*l.* 8*s.* 1*d.*	24*l.* 10*s.* 7*d.*	59*l.* 14*s.*	37*l.* 12*s.* 8*d.*	Rate of indebtedness per head of population

[5] Includes 180 miles of cable.

[6] Exclusive of Maori population, 44,097.

[7] Includes private line, 91 miles.

[8] Exclusive of grass lands.

[9] Census, 1881.

[10] Of which 3,041,923*l.* is accrued sinking fund.

V.—*Small Pox in Germany.*

The following letter is taken from the *Times* of 26th November, 1885 :—

"Sir,—I trust you will deem the following of sufficient importance for insertion in the *Times*. The report of the German Vaccination Commission, which sat between 30th October and 5th November last year, was presented to the Reichstag last April. This report was accompanied by valuable statistical information drawn up in the Imperial Board of Health office for the use of the commission, showing the effect upon small pox mortality of the law of 1874, which made revaccination compulsory throughout Germany at the age of 12 years. It contains, further, a *verbatim* report of the proceedings of the commission, a memorandum on the expediency of introducing calf lymph into general use in place of humanised lymph, vaccination statistics, and the formal conclusions arrived at.

"The commission was requested to frame conclusions which should fix the question of vaccination on a scientific basis, especially as regards the precautions requisite to insure the greatest possible security of the health of the vaccinated individual, to draw up rules for the attainment of this security, with the eventual introduction of calf lymph into universal use, and to arrange for the compilation of statistics of small pox sickness and deaths, vaccination, &c., throughout the empire.

"The commission was composed of representatives of various public departments, and of the different States forming the German empire. By the addition of three members opposed to compulsory vaccination, viz., Drs. Boeing, Uerdingen; Weber, of Cologne; and Betz, of Heilbronn, care was taken that the arguments of those opposed to compulsory vaccination should have a fair hearing. That they were fairly heard Dr. Boeing gracefully acknowledged. Excepting the president, Herr Köhler, all the members of the commission were members of the medical profession. The object in hand was the prevention of a certain disease, small pox, and the State utilised the knowledge of experts. Dr. R. Koch represented the Imperial Board of Health; Dr. von Scheel, the Statistical Bureau; Dr. Eulenburg, the Educational and Medical Bureau; Dr. Grossheim, the army; Dr. von Kerchensteiner, Bavaria; Dr. von Koch, Würtemberg; Dr. Thierfelder, Mecklenburg-Schwerin, &c. In all there were eighteen members, one of whom, however, Dr. Pistor, was absent all through from illness. The charts and statistics presented to the commission, and prepared for its use by the Imperial Board of Health, were founded on the official returns of deaths from small pox; but in the army tables the small pox sicknesses are given as well as the deaths. In Dr. Koch's opinion, no other statistical material than the mortality can be relied upon, questions as to the vaccinated or unvaccinated condition of the individual giving rise to numerous sources of error.

"The following is the text accompanying the tables of small pox mortality, almost literally translated. But the following observations of Dr. Koch must be carefully remembered. They are to be found on p. 34 of the report :—

"'I am of opinion, moreover, that statistics of small pox mortality may be utilised for several questions. To this end graphic representations of the small pox mortality have been prepared in the Board of Health office, from which the influence of the vaccination law may be seen. This work has been adversely criticised by many people, but quite unjustly. It has been said, for example, that cities with compulsory vaccination are erroneously represented in the tables as cities without compulsory vaccination. This is said to be an error, as regards London especially—a city which it is asserted has long had compulsory vaccination. Against this reproach I must observe that the text which accompanies the tables does not permit of any confusion on the subject. For the design of the tables is to illustrate the effect of the vaccination law of the year 1874, and it is to be presumed that every reader will understand by the expression "compulsory vaccination" the compulsion ordained by the vaccination law of Germany—*i.e.*, the compulsion to vaccination and revaccination. And this compulsion exists in Germany alone; no other country has "compulsory vaccination" of the kind.'

"The resources of language cannot make this clearer.

Text accompanying the Tables of Small Pox Mortality.

"'The most reliable index of the prevalence of small pox is afforded by the number of deaths from that disease. In order to learn the effect of the vaccination law, which has introduced compulsory vaccination as a means of protection against small pox, we may statistically compare—

"'(1.) The small pox mortality of an entire country after the introduction of such law with the mortality before its introduction.

"'(2.) The small pox mortality of a collective population with compulsory vaccination with that of a country without compulsory vaccination.

"'(3.) The small pox mortality of the large towns with compulsory vaccination with that of the large towns without it. Reliable returns as to the number of small pox sicknesses (the morbility) as distinguished from the deaths can be derived only from the army statistics, and they are of great use in helping us to form a judgment on the subject. Hence we may also compare—

"'(4.) The number of small pox sicknesses in an army in which revaccination is rigidly performed, and which enjoys the relative protection afforded by a well vaccinated community, with the number of small pox sicknesses in such armies as are scantily revaccinated, and which are also surrounded by a badly vaccinated population.'

"The following is a summary of the tables :—

"I. Germany.—Small pox mortality per 100,000 population before and after the introduction of the vaccination law of 1874.—From 1816 to 1870 the small pox was fairly steady, but temporarily

increased by a mild epidemic outbreak every ten or twelve years. The average yearly mortality in the intervals was from 15 to 20 or 25 per 100,000 of population, while during the epidemic periods it rose to between 40 and 60 for about two years at a time. In 1871-72 there occurred the tremendous epidemic of small pox in connection with the Franco-Prussian war, the deaths being 243 and 262 per 100,000 for these two years respectively. In 1873-74 the mortality from small pox, as is usually the case for a year or two after severe epidemics, sank very low—viz., to 35·6 and 9·5 respectively. In 1874 the law making revaccination compulsory throughout Germany at the age of 12 years came into force. From 1875 onwards the influence of this law becomes apparent, for, while without this law the small pox mortality would soon have reached its usual figures again, it now fell to and has since persistently remained at a lower figure than any exhibited since the beginning of the century. The small pox mortality per 100,000 from 1875 onwards to 1882 is respectively 3·6, 3·1, 0·3, 0·7, 1·2, 2·6, 3·6, and 3·6. That this extraordinary diminution was really the consequence of compulsory revaccination, and not merely an effect of the great epidemic of 1871-72, the following statistics prove :—

"II. Austria.—Previously to 1871 small pox mortality in Austria behaved much like that of Prussia, but was higher on the whole. In 1872-74 the last very severe epidemic gave mortalities of 190, 323, and 178 respectively per 100,000 of population. This epidemic was more fatal and lasted longer than the German epidemic. For the next year or two it fell, as in Germany, being 57·7 in 1875 and 39·2 in 1876. Here the influence of the epidemic in lowering the mortality ceases, and the latter rises at once to its old figures before the epidemic, and even higher. From 1877 to 1881 the respective yearly small pox mortality per 100,000 is 53·7, 60·6, 50·8, 64·3, and 82·6. This rise was thus not merely temporary. The remarkable and persistent decline of small pox mortality in Germany can only be due to the vaccination law, for all other conditions remain the same in the two countries.

"III. German and foreign cities compared.—Both German and other cities suffered severely in the great epidemic in the beginning of the last decade. But while in all cities outside Germany the mortality from small pox after a temporary decline again rose to considerable numbers, in all the large German cities, as in Germany generally, it has been persistently at extraordinarily low figures. Hardly a better illustration can be afforded of the effect of the compulsory revaccination law of 1874 than the comparison together of such cities as London and Berlin. Thus in London the respective yearly mortality from small pox per 100,000 from 1870 to 1883 is as follows :—30, 242, 53, 3·5, 1·6, 1·3, 20, 70, 38, 12, 12, 61, 11, and 3·4; while the corresponding figures for Berlin are 22, 632, 138, 11, 2·4, 5·1, 1·8, 0·4, 0·7, 0·7, 0·8, 0·7, 0·4, and 0·3. The same startling contrast appears when, *e.g.*, Breslau and Vienna, or Dresden and Prague, are compared together. The figures for these and other cities are given in the report.

"IV. Small pox deaths per 100,000 in the French, Austrian, and German armies.—(By the kindness of the Director-General

of the Army Medical Department, Sir Thomas Crawford, K.C.B., the British army is also compared). Like the general populations of the countries in question, the armies suffered severely during the great epidemic of 1870-71. During the Franco-Prussian war the German army suffered far less than the French, although coming into contact in France with a population among which small pox was rife.

"The war itself, with its fatigues and privations, could not have caused the great increase of small pox mortality, for the Austrian army suffered even more severely in the same epidemic.

"The harmful influence of a community affected by small pox, and the relative protection afforded by a community free from this disease, are at once evident on comparing the small pox cases in the German army before and after the law of 1874, which made general revaccination compulsory, for it must be admitted that revaccination had already been practised in the army with a fair degree of carefulness for several decades.

"It is worthy of remark that since 1874 not a single case of death from small pox has occurred in the German army, while both the Austrian and French armies still have a very high small pox mortality. No other reason than the influence of a system of primary and revaccination rigidly adopted can be made to account for the striking difference between the amount of small pox in the German army and that in the two other armies mentioned.

"Beginning after the epidemic of 1870-71 the deaths from small pox per 100,000 soldiers from 1872 onwards are as follows: In the French army, 10, 4, 3, 17, 28, 19, 20, 8, 14, and 7; in the Austrian army, 101, 108, 67, 21, 10, 25, 15, and 22; in the British army, 17, 8, 5, 2, 1, 3, 8, 2, 2, 2, 3, 6, and 5 (down to 1884). In the German army not a single death has occurred since 1874, while the cases of small pox are extremely few. (The report reaches to 1882-83.)

"In short, small pox is nearly stamped out of Germany. The result of the ten years' experiment of compulsory revaccination is before the reader, and this result ought to deeply interest all the countries of Europe, nay, the whole world. The text which accompanies the tables of statistics concludes thus:—

"'In the above tables the principles of statistics have been rigidly adhered to. Collective populations are compared with collective populations, cities with cities, and armies with armies. Moreover, the subjects of comparison are numerically so vast that the errors inevitably connected with smaller figures are eliminated. In Germany, as a whole, small pox has diminished to a degree never before known so far back as any records reach, while in all neighbouring countries it is, as usual, still very prevalent.'

"The German cities suffer scarcely at all from small pox, which in all foreign cities continues to claim its victims. Lastly, the German army is almost entirely free from small pox, whereas the Austrian and French armies still suffer severely.

"It would take up too much space to give all the conclusions of the commission voted after discussion. Suffice it to say that these conclusions advised the universal use of calf lymph (which

in Germany is already extensively adopted) in place of humanised lymph, the establishment of national institutions for the provision of calf lymph in a state of purity, the institution of a proper supervision of public vaccination, and a proper selection of public vaccinators, &c., schemes being drawn up ready for the legislature to act upon. It may be mentioned that all three opponents of compulsory vaccination acknowledge that vaccination did confer protection against small pox. The commission advised that the age of 10 years should be selected as the best age for revaccination, because this age gave time for its repetition, if necessary, before the children left school.

"I am, Sir, your obedient servant,

"Ed. J. Edwardes, M.D. Lond., M.R.C.P.

"17, Orchard Street, W."

VI.—*The Registrar-General's Ten Years' Supplement.*

The usual "ten years' supplement" of the Registrar-General of births, deaths, and marriages in England has just been issued for the period 1871-80. According to the practice of Dr. Farr, the new superintendent of the statistical department of the Registrar-General, Dr. Ogle, prefaces the supplement with a full explanatory letter, giving an account of the changes in the rate of mortality in the period as compared with previous periods. In the *Times* there appeared a condensed account of this explanatory letter, from which we abstract the following:—

"The letter opens with a review of the broad and general facts of the national mortality, and shows that, although the mean annual death-rate for England and Wales during the decennium 1871-80 has fallen to 21·27 per thousand, or lower than that of any previous like period since civil registration began, yet that the advantages hence arising have been unequally shared among different classes of the population. The male death-rate has fallen by 4·24 per cent., and that of females by 6·02 per cent., since the immediately preceding decennium. The gain, moreover, has been rather in the earlier than the later periods of life; during which, indeed, the rates show a positive increase; but with the difference that while the male death-rate was higher than in the previous decennium at each period after 35 years of age, that for females did not show an increase until after 45 years of age.

"In considering the causes of the general diminution of mortality, and also of the inequality of the results at different ages, Dr. Ogle is of opinion that much must be laid to the credit of the various proceedings which may be comprehensively described as 'sanitary reform,' and he thinks it possible that such reform, by removing or diminishing sources of disease which press heavily upon the young, may promote the survival of a certain number of comparatively weakly persons, who, after all, by not attaining old

age, tend to increase the death-rates at the later periods of life. Against this consideration, however, he urges that the effect of sanitation would also be to preserve the health of many children who might otherwise not have been killed but more or less crippled by disease, and who might have been expected to attain adult age but not longevity. Assuming these two modes of operation to some extent to balance each other, there remain as causes of adult mortality the intensity of the struggle for existence in the present day, and also the effects of the ever-increasing tendency of the adult rural population to migrate into towns, in which the mortality is always higher. All such explanations, however, are only conjectural; and, in noting the facts, it is necessary to preserve an attitude of suspended judgment with regard to their significance.

"A diminished death-rate in the earlier, and an increased death-rate in the later, periods of life might at first sight occasion doubt as to the extent to which the community would derive benefit from the change; as to the extent, that is, to which the saved life would fall into useful and productive, as distinguished from useless and dependent, periods. To this question, the tables contained in the report furnish an entirely satisfactory answer, and they are summarised by Dr. Ogle with remarkable clearness. He forms from them new life tables, for males and females separately, which start with the assumption of a million of births. The tables then show how many of the million, according to the death-rates of the decennium 1871-80 would be surviving at each year of life, and what would be the average expectation of life of the survivors. The facts thus shown are contrasted in parallel columns with the same facts as set forth in the former English life table, which was based upon the mortality of the years from 1838 to 1854.

"According to the old table, one-half of the million males would have died before the 45th year; and one-half of the million females before the end of the 47th year. According to the new table, one-half of the males would not have died until after the end of the 47th year; and one-half of the females would still be surviving at the end of the 52nd year. The male survivors at the end of every year by the new table exceed the survivors of the same age by the old table at every age up to the 67th year; at the end of which the survivors by the new table would be 267,829, and the survivors by the old table would be 267,160. After this there is a change, and the survivors at the end of each subsequent year are more numerous by the old than by the new table. With regard to females, it is not until almost the very end of life that the survivors by the new table become fewer than by the old; for even at the end of the 92nd year of life there are as many survivors by the new as by the old table, notwithstanding that the female death-rate has increased after the 45—55 years' period. A female born in 1871-80 had a better chance of living to be 92 than one born in 1838-54, but a slightly less chance of living longer than that. On the other hand, a male born during 1871-80 would have a better chance of living 67 years than a male born during 1838-54, but a smaller chance of living more than 67 years.

His chance of living to complete 90 years would be fully one-ninth less than in the earlier period, or, more precisely, would be as 8,015 to 9,321. But the mere fact that the male death-rate has increased after the 25—35 period of life must not be interpreted to imply, as might be hastily assumed, that the number of males surviving out of a given number will be less after that age; for, as has been shown, the contrary is the case up to the 67th year; the explanation being that the death-rates before the 35—45 period of life have gone down so greatly since 1838-54, and the survivors at the end of the 45th year are so much more numerous than they were under the older rates, that they can support the higher mortality of after years for a considerable period, and yet retain their numerical superiority.

"In order to balance the loss and gain from the changes in the death-rate, Dr. Ogle next inquires what amount of lifetime has been added to the community by the diminution in the death-rates since 1838-54, and to what age-periods the additional years belong. The following is his solution of the problem:—

"'The mean lifetime of males is by the new life table 41·35 years, whereas by the old table it was only 39·91 years. According, therefore, to the new life table, a million males would live 1,439,139 more years than would be the case according to the old table. Similarly a million females would live 2,777,584 additional years. The years thus gained would be divided between the different periods of life in the manner shown in the following table:—

Additional Years Lived by a Million Males and a Million Females.

Age Periods.	Males.	Females.
5—15	255,340	288,226
15—25	281,872	339,933
25—35	344,906	453,221
35—45	310,746	499,471
45—55	211,040	474,009
55—65	86,920	385,257
65—75	— 10,464	239,617
75—85	— 27,770	89,568
85 and upwards	— 13,451	8,282
Total years gained	1,439,139	2,777,584

"'This table shows plainly how erroneous is the conclusion sometimes drawn that because the death-rates have fallen only in the earlier age-periods, while they have risen in the later age-periods, the aggregate gain to the community from the changes is confined to the unproductive years of life. We may fairly take the period which intervenes between 25 and 65 years of age to be the most valuable part of life, and of the aggregate years saved, 66 per cent. in the case of males, and 65 per cent. in the case of females, are lived in this period.'

"Another aspect of the question is the following: The mean annual number of births in England and Wales in 1871-80 was

858,878 ; and of these births 437,492 were of males, and 421,386 of females. The additional years lived by this annual number of children, if subject to the reduced rates of the new life table, would be as follows:—

Additional Lifetime of Children Born Annually.

	Additional Lifetime, in Years, of		
	437,492 Males.	421,386 Females.	858,878 Persons.
0—15	111,709	121,454	233,163
15—25	123,317	143,243	266,560
25—35	150,894	190,981	341,875
35—45	135,949	210,470	346,419
45—55	92,328	199,741	292,069
55—65	38,027	162,342	200,369
65—75	— 4,578	100,971	96,393
75—85	— 12,149	37,743	25,594
85 and upwards	— 5,885	3,490	— 2,395
	629,612	1,170,435	1,800,047

" ' The changes in the death-rates therefore have given to the community an annual addition of 1,800,047 years of life shared among its members ; and, allowing that the changes in the death-rates are the direct consequences of sanitary interference, we must regard this addition of nearly two million years of life as an annual income derived from money invested in sanitation.'

" In a consideration of the several headings or ordinary causes of death under which the recorded saving has been effected, Dr. Ogle has to point out that the mortality from all zymotic diseases has fallen very considerably, with the exception that whooping-cough has remained stationary, and that from small pox a large increase, of from 163 per million living to 236 per million, was due to the very serious outbreak which marked the two first years of the decennium 1871-72, and which led to the compulsory appointment of vaccination officers by boards of guardians, and consequently to a more stringent enforcement of infant vaccination. If, however, the statistics of small pox are given by what Dr. Ogle calls natural periods—that is, by periods which coincide with successive improvements in the enforcement of the Vaccination Acts, it becomes manifest that there has been a gradual and notable decline in the mortality from the disease. It may be further shown that this decline is due to diminished mortality among children of tender age, while the mortality at latter periods of life has actually increased, and has increased in proportion to the age attained. The explanation seems to be that, when regarded by the light of long experience, vaccination confers an immunity from small pox which is as real as, but less permanent than, that conferred by small pox itself; so that the protective influence of the former requires to be renewed from time to time. This precisely coincides with the results which have been recently set forth by the German commission appointed to inquire into the subject.

"Taking the other principal zymotic diseases, we find that the annual deaths per million living from scarlet fever have fallen from 972 to 716; those from fever, including typhus, enteric, and ill-defined forms of continued fever, from 885 to 484; those from diarrhœa from 1,076 to 935; those from phthisis from 2,475 to 2,116; and those from diphtheria from 185 to 121. Under the two last headings, however, there is some uncertainty as to how far the improvement may be only apparent, and due to a more exact statement of the causes of death upon the medical certificates. Diphtheria is probably less liable than formerly to be confounded with other forms of fatal croupous affections; and phthisis is less liable to be confounded with other forms of diseases of the respiratory organs, under which latter heading the fatality has increased. The report contains much valuable information with regard to the mortality produced by many other diseases, but it would exceed our limits to carry this part of the subject further. It may, nevertheless, be mentioned that the deaths of women in childbirth have remained practically stationary for the last thirty years, and that they amount to something less than five for every thousand children born living.

"The total national death-rate of 21·27 per thousand is compounded, of course, of higher and lower rates in different localities; and the extreme limits of these rates have been 14·13 and 33·57 per thousand. Among the 647 districts into which England and Wales are divided, there were eight in which the mean annual rate was under 15 per 1,000; 31 more in which it was under 16; and again 62 others in which it did not exceed 17. These 101 districts are described as the 'selected healthy districts,' and form a useful standard for comparison. In 326 other districts the mean annual death-rate was between 17 and 20; in 195 it was from 20 to 25; in 23 from 25 to 30, and in the remaining two it exceeded this high figure. Dr. Ogle attributed these differences partly to differences in the quality of the sanitary administration, partly to the different density of population, and partly to unwholesome occupations. He says:—

"'It must not be supposed that the higher death-rates, which go hand in hand with increased density of population, are simply the direct results of such aggregation. Doubtlessly when people are crowded together certain injurious conditions are produced, which directly affect the mortality; the air, the soil, and often the water are liable to be fouled; and infectious diseases, having a shorter average distance to travel from individual to individual, are more readily spread abroad. But these direct consequences of close aggregation are probably as nothing in comparison with its indirect consequences or concomitants. The more crowded a community, the greater, speaking generally, is the amount of abject want, of filth, of crime, of drunkenness, and of other excesses; the more keen is the competition, and the more feverish and exhausting the conditions of life; moreover, and perhaps more than all, it is in these crowded communities that almost all the most dangerous and unhealthy industries are carried on. It is not so much the aggregation itself, as these other factors

which are associated with aggregation, that produce the high mortality of our great towns or other thickly populated areas. Our next business, therefore, should be to investigate the action of each of these separate factors separately, and to see to what extent and in what manner they respectively add to the mortality of towns. There is, however, only one among them, but that the most important, that lends itself at all readily to statistical examination—namely, the influence of occupation, and consequently this is the only one of the factors with which it will be attempted to deal; the remaining and larger part of this introduction being devoted to its study.'

"The greater part of Dr. Ogle's introductory letter is devoted to an examination of the death-rates of different occupations, and to a preliminary account of the sources of error by which such an examination is beset, and of the expedients by which they may be avoided. In order to deal with larger numbers, the figures employed are taken from three consecutive years; and the chief stress is laid upon the deaths which have occurred in two successive age-periods, that from 25 to 45 and that from 45 to 65, these embracing the part of life in which the influence of occupation is most certain to be felt. In order to obtain a basis of comparison, the mortality of all males of similar ages in England and Wales is taken as 1,000, and the death rate of the class under examination is compared with this as with a standard. In some cases the rate of the examined class would exceed 1,000; in others it would fall short of it. The former, it need hardly be said, would be examples of unhealthy, the latter of healthy occupations. As an additional standard, we are told that the male mortality within the prescribed ages of the 'selected healthy districts' amounted to 804.

"The first place among healthy occupations is held by ministers of religion; of course, without distinction of creed. The comparative mortality of the classes comprised under the three headings of 'clergyman, priest, minister,' is only 556, or scarcely more than half the average, and more than one-fourth below that of the selected districts. Gardeners and nurserymen come next, with a figure of 599; then farmers and graziers, with a figure of 631; labourers in agricultural counties, with 701; schoolmasters, with 719; and these are closely followed by certain trades—notably, by grocers, coal merchants, paper manufacturers, lace and hosiery manufacturers, wheelwrights, shipbuilders and shipwrights, and coal miners. In none of these trades does the figure of mortality reach a higher point than 775. There is a curious difference between the miners of the coal and ironstone districts and those of Cornwall, among whom there is a very high mortality, expressed by the figures 1,839. There is some reason to believe that the inhalation of coal-dust, so far from being injurious, may even act beneficially in certain conditions.

"In dealing with high figures, however, the first place is claimed by the trades which are concerned in the manufacture and distribution of intoxicating drink, and which, as is well known, entail many temptations to drink it to excess. The list of unhealthy occupations is headed by the class of inn and hotel servants, whose

figure mounts up to 2,205. Their death-rate in the 25—45 period is 22·63, and in the 45—65 period 55·30; both being nearly double those of the medical profession. The highest places next to them are held by general labourers in London, and by costermongers, hawkers, and street sellers; the former class with 2,020, the latter with 1,879. It is probable that both are largely made up of broken men, the wrecks of other callings. Innkeepers, publicans, spirit, wine, and beer dealers follow, with a figure of 1,521; and brewers, with 1,361. In support of the belief that these high rates of mortality are chiefly due to alcoholic excess, Dr. Ogle has compared with them the mortality assigned to diseases of the liver, the organ through which such excess chiefly declares itself, and has obtained results which are entirely in harmony with those of the trade returns. Next to the trades concerned with alcohol, the highest rates are furnished by occupations which involve the breathing of dust (other than coal-dust), and especially of dust of a sharp and gritty character or largely composed of mineral matters; next, those in which there is exposure to lead-poisoning, as with plumbers, painters, and file makers. The earthenware manufacturers, who are much exposed to mineral dust, have a figure of 1,742; file makers, who work upon a leaden cushion, reach 1,667; and plumbers and painters, who are also exposed to lead, reach 1,202. It will furnish a remarkable contradiction to a prevailing impression that butchers have a high death-rate, their figure of mortality amounting to 1,170, the causes of death among them being partly due to the diseases of intemperance, and partly to phthisis and other maladies from which they have long been supposed to enjoy an especial immunity. It is now sufficiently manifest that the disadvantages of their calling, from a sanitary point of view, are greater than its advantages.

"The details of Dr. Ogle's letter, which want of space has compelled us to exclude, will be of great interest to all students of vital statistics, and the whole of it fully justifies the hope which is expressed in the last paragraph, with which we must bring this notice to a conclusion:—

"'To the influence of occupation upon death-rates a very considerable space, and indeed the larger part of this introduction, has been allotted, and not only have the death-rates been calculated for the males engaged in each of some hundred different industries, but for some score of these an attempt has been made to calculate the share in such death-rates that is due to individual diseases. I can but think that the results of this latter inquiry, now undertaken for the first time in the statistical branch of your office, will be found to be of much interest to those who give attention to vital and social statistics; and I would further express my hope that the experience which has been gained in this first attempt may render it possible, when the next decennial supplement comes to be undertaken, to conduct a similar inquiry upon a wider basis and for a larger number of industries, and thus to give statistical results of still greater value and of increased accuracy.'"

VII.—*Additions to the Library.*

Additions to the Library during the Quarter ended 31*st December*, 1885, *arranged alphabetically under the following heads:*—(a) *Foreign Countries;* (b) *India, Colonial, and other Possessions;* (c) *United Kingdom and its several Divisions;* (d) *Authors, &c.;* (e) *Societies, &c.;* (f) *Periodicals, &c.*

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Buenos Aires.—Bulletin mensuel de Démographie de la ville de—. IV^e année. Nos. 7—9, 1885	The Statistical Bureau
La Plata. Reseña Estadistica y Descriptiva de La Plata, Capital de la Provincia de Buenos Aires. (General Statistics.) Plates and plans, 8vo. 1885	Dr. R. E. Coni, La Plata
Austria and Hungary—	
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Statistisches Jahrbuch des k.k. Ackerbau-Ministeriums für 1884. Drittes Heft. Der Bergwerksbetrieb Oesterreichs im Jahre 1884. Erste Lieferung. Die Bergwerks-Production	—
Statistische Monatschrift. XI Jahrgang, Heft 1, 3—9. 8vo. 1885	—
Statistische Nachrichten über die Eisenbahnen der Österreichisch-ungarischen Monarchie für das Betriebsjahr 1883. 4to.	The Ministry of Commerce, Vienna
Hungary—	
Magyarország Aruforgalma Ausztriaval es mas Orszagokkal. (Trade Statistics.) Fuzet 1, 2, 1885. 4to.	The Royal Hungarian Statistical Bureau
Ville de Prague. Bulletin hebdomadaire de la—, et des Communes-faubourgs. (Current numbers)	The Statistical Bureau of Prague
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Agriculture. Recensement Général de 1880. 1^e Partie. Préliminaires; Introduction; Cartes. 2^e Partie. Relevés généraux. 2 vols., maps, 4to.	The Administration of Statistics, Ministry of the Interior
Annuaire Statistique de la Belgique. Quinzième année, 1884. Tome xv Map and diagrams	
Exposé de la Situation du Royaume de 1861 à 1875. Vol. ii, 14^e Fascicule. La. 8vo.	
Statistique du Mouvement de l'État Civil et de la Population du Royaume pendant l'année 1884. 4to.	
Ville de Bruxelles. Bulletin hebdomadaire de Statistique Démographique et Medicale. (Current numbers)	Dr. E. Janssens, Brussels
China. Imperial Maritime Customs. I. Statistical Series, No. 2. Customs Gazette, No. 65, Jan.—March; No. 66, April—June, 1885	Sir Robert Hart, K.C.M.G.
Denmark. Nationalökonomisk Tidsskrift. Hefte, 5 und 6, 1885	The Danish Political Economic Society

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Administration des Postes Égyptiennes. Rapport sur l'Exercice de l'année 1884 . . . par le Directeur-Général. 8vo.	W. F. Halton, Esq., Alexandria
Administration des Chemins de Fer, des Télégraphes et du Port d'Alexandrie. Rapport du Conseil d'Administration sur l'Exercice, 1884. VIII^e année. La 8vo.	J. Rabino, Esq., Alexandria
Budget Provisoire du Gouvernement Egyptien pour l'Exercice, 1884. . . Fol.	H. E. The Minister of Finance
Compte Général de l'Administration des Finances rendu pour l'Exercice, 1884, par le Ministre des Finances. Fol.	
Compte Rendu des Travaux de la Commission de la Dette Publique d'Égypte pendant les années 1876-84. Années I—IX. 9 vols. 8vo.	J. Rabino, Esq.
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Bulletin Consulaire Français. Année 1885, Octobre et Novembre	
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Denombrement de la Population, 1881. 8vo.	—
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Ministère des Finances. Bulletin de Statistique et de Législation comparée. Septembre—Novembre, 1885	M. A. de Foville
Ministère des Travaux Publics. Bulletin du—. Statistique et Legislation Comparée. Août et Septembre, 1885	The Ministry of Public Works
Ministère des Travaux Publics. Album de Statistique Graphique de 1884. Chemins de Fer. Routes nationales, Navigation intérieure, Navigation Maritime. Divers. Importations et Exportations de 1716 à 1881. Mouvement quinquennal de la population de la France de 1801 à 1881. Boards. Diagram maps. 4to.	M. E. Cheysson, Paris
Statistique de la France. Nouvelle Série, Tome xii, Statistique Annuelle, année 1882. 1^e Partie, Mouvement de la Population pendant l'année 1882. 2^e Partie, Statistiques diverses concernant les Centres de Population. 3^e Partie, Agriculture et Sinistres. 4^e Partie, Industrie. Tableaux. Fol.	The Ministry of Commerce

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Ville de Reims. Bulletin Mensuel du Bureau Municipal d'Hygiène. Août—Novembre, 1885	The Bureau of Hygiène
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Journal of the Ministry of Finance. (Current weekly numbers.) (In Russian.) 1885	M. A. Vessélovsky
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Providence. Report of Deaths in the City of. August—November, 1885	Dr. E. M. Snow
Bankers' Magazine. September—December, 1885. New York	The Editor
American Geographical Society, Bulletin of the—, No. 1. 1885	The Society
American Philosophical Society. Proceedings of the—. Vol. xxii, No. 120. Plates. 1885	"
Franklin Institute. Journal of the—. October—December, 1885	The Institute
Smithsonian Institution. Annual Report of the Board of Regents, showing the Operations, Expenditures, and Condition of the Institution for 1883. Records of Scientific Progress, 1883. Introduction by *S. F. Baird;* Astronomy by *E. S. Holden;* Geology by *T. S. Hunt;* Geography by *F. M. Green;* Meteorology by *C. Abbe;* Physics by *G. F. Barker;* Chemistry by *H. C. Bolton;* Mineralogy by *E. S. Dana;* Botany by *W. G. Farlow;* Zoology by *T. Gill;* Anthropology by *O. T. Mason.* Plates, &c. 8vo. 1885	The Institution
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(*b.*) Quinquennial valuation of assets and liabilities, with *table* showing suspension and cancelling of certificates and registry where societies violated provisions of the Act; and statement of the general result of the valuation in the case of 6,567 societies in England and Wales, 1,537 of these showing a surplus, and 5,030 a deficiency 27
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BRABROOK (E. W.). *The Relation of the State to Thrift—contd.*

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—— statutes affecting societies 44

Discussion on Mr. Brabrook's Paper:

Blackley (Rev. Canon)

There ought not to be any "resting place," but the more facilities given to the thrifty to practice thrift and to the unthrifty to become provident, the better it would be for the country at large. Defended the proposal associated with his name 45

Bailey (A. H.)

The State should assist societies in making the periodic valuations, though in his opinion no valuations should be required, the finance being like that of insurance companies, the contributions varying with member's age . 45

Randall (J. S.)

The great cost to registered societies and preparing the figures required of them ought to be made beneficial to them 46

Bernard (W. Leigh)

Advocated a compulsory system of public audit, and the withdrawal of banking facilities from societies registered under the Industial and Provident Societies' Act, 1876 47–8

Foxwell (Professor)

Desired distinction to be made in published returns between trading societies whose object was to sell at lowest price and those which charged current prices and accumulated profits for benefit of purchasers. Suggested that the Government might offer greater facilities in regard to insurance. Referred to Starr-Bowkett Building Societies as having been the means of encouraging a great deal of thrift. They seemed to be the least injurious way in which chance could be brought in to attain that end . . 48–9

Bailey (A. H.)

Described Starr-Bowkett Building Societies as purely gambling institutions which ignored the question of interest altogether. [To this Professor Foxwell replies in a note (pp. 49—50) that the attraction of gambling for the interest is found to stimulate to the saving of the principal] . . 49

Neale (E. Vansittart)

Co-operative societies afforded the first instance in which the masses of the people had taken into their own hands those transactions out of which the wealth of the country had arisen, as a means of bettering their own position 50

Bourne (S.)

Could not endorse Mr. Brabrook's satisfaction as to condition of friendly societies in general, in face of the alarming figures brought forward. Thought more State supervision wanted to prevent deception . . 50–51

Radley (C. J.)

The system in Canon Blackley's scheme of compelling the whole population in order to catch the unthrifty, and the way in which economic principles had been disregarded, would justify all that had been said about it. The certification of a society's rates proposed in Lord Greville's Bill a mockery and a sham; as the Bill only applied to new societies, it left the old ones a monopoly of unsoundness. The deficiencies in the valuation were not so alarming as might be imagined, and a small extra charge would generally balance matters. Registry office should compile catechism of friendly society principles to be taught in elementary schools . . . 51–2

Lloyd (J.)

Thought the suggestion for a manual of instruction a valuable one, but could not expect a Government department to carry it out; looked to the Post Office for further proposals in the interests of the working classes, but thought it wrong for capitalist classes to interfere to keep down the limits of insurance, annuity, and deposit by which the Post Office was bound . 52–3

Beardsell (T. S.)

The deficiency in friendly societies was actuarial, arising from loss of subscriptions, and the present value of a prospective deficiency; scale of contributions might be so arranged as to adjust them to scale of benefits; objected to mode proposed in Canon Blackley's scheme, and thought Mr. Brabrook's remarks justified 53

Brabrook (E. W.), reply:

As the hour was late he left questions for consideration . . . 53

President (Sir Rawson W. Rawson)

It was by friction of opinion and by statistical investigation of facts that conclusions would be arrived at for the benefit of our fellow creatures . 53

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Continued fall in prices, and no recovery from depression of previous years. 1884 much worse for business than its predecessor 54–5
Railway traffics fallen off 1⅛ per cent.; decline in imports 8·4 per cent.; decline in exports 2·8 per cent.; and small decline in revenue . . 55
Less surplus capital available for employment of labour than there has been for many years, whilst capital has been idle because, as in shipbuilding, there was no prospect of profitable employment 55–6
Woollen trade comparatively good; consumption in cotton and textile trades very large; leather and other trades large business, and no falling off in consumption of articles of general luxury 56
Prices: List of prices of various articles in detail, in support of the view that low range is apparently permanent 55–9
Iron trade: Falling off of production most marked and continuous throughout the year in shipbuilding 59
Money market: Its course during the year hardly in accordance with what we should expect in time of falling prices and general dulness; scarcity of gold explains smallness of bank surpluses all over the world . . 63–4
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CONNELL (A. K.). *Indian Railways and Indian Wheat* . . . 236

Public works policy regarded as a gigantic scheme of State interference; demands of chambers of commerce for development of India, and the economic effects of such development considered 236–40
Contrast between America, India, and England as to railways . . 240–42
Financial results of railways to the Indian taxpayer considered, with *tables* showing loss to the State on the undertakings 242–4
Though the taxpayer has to bear the burden of the debt on the railways, his profits on trade go largely to the middleman, to whom he is generally in debt; the land tax; report of Dr. Pollen on the Deccan ryots; opinions of Sir Louis Mallet and Lord Salisbury; the opening up of the country results in the destruction of home industries and the crowding of the people on the land 244–7
Storage of grain is a better safeguard against famine than are railways, as the grain can be used for employment of labour or for trade, and for the latter a slow means of communication is all that is wanted . . . 247–9
Producer is barely repaid cost of cultivation, as he is the serf of the middleman; figures of wheat production cited in illustration; a question whether Government should burden taxation for railways to bring to seaboard the surplus grain that would otherwise be stored against famine . 249–51
Bounties to wheat-carrying lines in parts of India had had the effect of making it harder for landless classes to live; of destroying home industries by foreign competition; of reducing stores of grain to small reserve, so as to reduce people to danger of starvation 252–5
India can only compete with America in exceptional circumstances; she has not got free trade, and though the vice of protectionism is denounced by free traders, the denunciation does not extend to the system of State-aided monopoly which levies a local rate to give a bounty to English machinery and iron 255–6
Programme of Indian Government for new railways; its financial and economic consequences; there is no margin to work it without extra taxation; arguments of the advocates of public works policy are most misleading . 256–6

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Protectionist policy of Indian Government; danger of increasing the foreign debt; delusion to divert trade of country by bounties in hope of enriching the people 260–61
India's great need is free trade; she wants good roads for internal communication; her railways constitute the worst kind of protected monopoly, and they have absorbed local funds that might have been spent on local roads, local industries, or irrigation works; State should confine itself to military railways 262
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Area in acres under wheat or barley, 1880-83 267

Discussion on Mr. Connell's Paper:

The President (Sir Rawson W. Rawson)

Read a letter from Sir J. Caird agreeing with Mr. Connell that in parts of India there is danger that railways may draw away all the resources; but pointing out that higher prices would stimulate production, though railway expenditure should be limited to most populous parts of the country, and expressing opposition to guarantees of expenditure for railways that are not likely to pay 267–8

Harris (W. J., M.P.)

Our duty to develop the communications of India in every way possible, it being a conquered country; Mr. Connell's arguments against railways would also apply to irrigation works; India had not got the advantage of machinery, and she was bound to go through the crisis, even if it entailed suffering in the meantime; would not advocate protection of hand labour against machinery. When Mr. Giffen argued that the population of India would shortly overtake its means of subsistence, he did not remember that the frugal fare of the Hindoos made the comparison illusory . . . 268–70
[Mr. Giffen, in a note, denies the correctness of this statement of his views]. 276

Paul (Moncreiff)

Important to look to what India could do in supplying wheat; railways would enable producer and consumer to be brought more easily together; admitted that mistakes might have been made, but did not think that India was not to be benefited by further judicious development of her railway system 270–71

Kimber (E.)

Paper a very able one, but there were underlying it some serious fallacies, and some arguments were only carried half way to a conclusion; cites as illustrations the figures as to exportation of wheat, the percentage of profit made by Indian railways, cost of making roads, loss on exchange and improved value of land 271–2

Wood (M.)

Had followed railway question since the time when the guarantee system began to break down; it was important that the estimate of the unlimited advantages of railways in India should be challenged; could not support Mr. Connell's final conclusions, but thought that more care was needed in the way in which the Indian railway system was extended; cheap water carriage and storage of water would go further than any other appliances to meet wants of India 272–4

Price-Williams (Mr.)

Construction of a railway would create and develop a return traffic; and system of cheap railways would be a great boon to India . . . 274

The President (Sir Rawson W. Rawson)

Hoped that the consideration of the question would be turned to good account 274

Connell (A. K.), reply:

His meaning had been misconceived, for he argued against State railways, and had no objection to railways introduced by private enterprise; State did not introduce railways into England, and if in India there was the alleged demand for railways, why did not private enterprise construct them? Doubted whether on the whole India had derived any benefit from State railways, though the advantage to England from the increased trade had been enormous 274–6

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Dearth of outward freight is great deficiency of the port . . . 111–12

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Conclusion: that the international trade of the port must decline unless railway and dock charges are reduced 115–16

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Edgeworth (F. Y.). *On Methods of Ascertaining Variations in the Rate of Births, Deaths, and Marriages.* [Read before Section F of the British Association, at Aberdeen, September, 1885] . . 628

Introduction: exemplification of the method of eliminating chance by the theory of errors; estimate of the value of this method . . . 629–31

It is a test of a sort which unmethodical wisdom can to some extent dispense with and to some extent itself provide; also the calculus of probabilities furnishes another method of eliminating chance, less efficacious indeed and more laborious, yet often not much more laborious than the method of errors; still it is not waste of labour to attempt to perfect the higher method; to show that the conditions postulated by the theory are fulfilled *in rerum natura* 632

The loose, yet mathematical, character of the inquiry, whose object is the regularity of fluctuations, may form a useful discipline to the student of abstract social science 633

Entangled moduli:—

Lemma 634

Giving certain simple statistics of dactyl-frequency, to find the fluctuation of the means of four dactyl-rates when (1) the first figure is based only on observations of the first feet of hexameter; the second figure on second feet only, and so on; (2) the constituents of the mean are taken indiscriminately from all (the first four) feet of Virgilian hexameters . . 634–6

There is little or no compensation between the dactyls of different feet and lines, the principle of distribution is apparently pure choice . . 637

The hexameter tapers in respect of dactyl-frequency from the first foot to the fourth: the mean number of dactyls for the first foot being 2·8; for the second 2·3; for the third 1·9; for the fourth 1·3 638

There is a similar difference between the extent of the four fluctuations . 638

Remarkable coincidence between the results obtained here and in "Methods of Statistics" 639

Problem:—

To find the fluctuation of death-rates for groups of population each numbering *n*, (1) when the groups belong to the same year and locality; (2) when they are formed by random selection from different years and regions; A, death at all ages; B, death at age periods 25—30, &c. 639

Problem A (1):—

(*a.*) Superior limit for the required fluctuation is found by the method called extrication, viz., 53, 48, 54, 47, 140, 35 640–41

(*b.*) By the method of collation 44 and 50 are found as superior limits . 641–3

(*c.*) These results submitted to direct verification 643

(*d.*) The principle of sortition gives an inferior limit 20; nature of case (1) . 643–4

Problem A (2) has much the same answer 646

Problem B: (*a.*) By the method of extrication superior limits for the sought fluctuation are 77 and 56; (*b.*) By the method of collation 36; (*c.*) The method of sortition gives 50 as the real value or inferior limit . . 647

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Difference in risk much smaller than generally supposed, for assuming the number of persons employed in both kinds of mines to be equal, for every 100 killed by accidents underground at mines under the Coal Mines Act there would be 93·6 killed at mines under the Metalliferous Mines Act . 278
Further correction necessary, as the Coal Mines Regulation Act applies not only to coal but to stratified ironstone, shale, and fireclay mines . . 278
If all disturbing factors are eliminated, the average underground death-rate at coal mines proper would not exceed 2·55 per 1,000. 279
In the metalliferous mines of Cornwall and Devon the average annual death-rate, 1873-83, among underground workers was 2·73 per 1,000 . 279
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Hamilton (R.)

It would be a great gain if areas given in successive censuses could be identified; suggested that returns of enumerators of small districts should be preserved 437-9

Craigie (Major)

Paper had left untouched the changes in the trading population of London and the quantity of food supply; government of London an urgent question 438-9

Bourne (S.)

Growth of London not likely to proceed as rapidly as it had done . . 439

Price-Williams (R.), reply:

Had considered the question of excluding open spaces from his estimates of areas; his diagrams relating to Liverpool, Manchester, and London were drawn to the same scale; he had excluded districts outside metropolitan area; in his estimate of future population of London had not taken into consideration that of the provinces; saw nothing likely to prevent continued growth of London as indicated by him 439-40

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RAVENSTEIN (E. G.). *Laws of Migration—contd.*

"Laws of migration," or propositions put forward are: (1) That the great body of migrants only go a short distance, and that "currents of migration" set towards centres of commerce; (2) That the process of absorption by a town of rapid growth begins in the surrounding district, and gradually extends to places more remote; (3) That the process of dispersion is the reverse of that of absorption; (4) That each main current of migration produces a compensating counter current; (5) That migrants proceeding long distances prefer great centres of commerce; (6) That the natives of towns are less migratory than those of the rural parts of the country; (7) That females are more migratory than males . 198-9

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Border towns become centres of attraction to migrants from two counties. Birmingham and Aston Manor, and other towns cited in illustration . 203-5

Some towns absorb more men than the immediately surrounding county can supply. London, Liverpool, Manchester-Salford, Edinburgh-Leith and Dublin cited; *tables* 205-14

Some towns increase more rapidly in population than the country districts which surround them, or they increase at a tolerable rate whilst the rural population surrounding them either gains little in numbers or is actually retrogressive; Middlesbrough cited in illustration; *tables* . . . 214-17

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Discussion on Mr. Ravenstein's Paper:

The President (Sir Rawson W. Rawson)

The influx of population from the agricultural into the urban and manufacturing districts one of the difficult problems of the present day, not only in England, but in France, the United States, and throughout Europe . 228

Longstaff (Dr. G. B.)

Had prepared a map showing counties according to the results obtained, by comparing ten years' increase as shown by census with natural increase shown by comparison of registers of births and deaths; thought that in such counties as Anglesey and Cornwall people were almost all natives, because there was no county beyond from which migrants would come; it was interesting to determine real annual decennial migration from place to place; takes German and Irish as illustrations; in other countries there might be other laws of migration than those suggested by Mr. Ravenstein . 229-30

Humphreys (N. A.)

Small proportion of the enumerated population born in the extra-metropolitan districts apt to be deceptive; thought Mr. Ravenstein not explicit enough in his statement as to the increase of the natives of Durham, as the last census was the first occasion on which the natives of the county had become so grouped as to facilitate such inquiries; the subject was full of interest and of perplexity because of the difficulty of localising migrations in sufficiently small areas 230

The President (Sir Rawson W. Rawson)

Drew attention to a paper by M. Loua in the "Journal of the Statistical Society of Paris" on the non-progress of the population of France, and showing the changes of population in the last five years, and distinguishing between the excess of births over deaths in each locality, and the increase independent of that change; the paper showed that the population of France was almost stationary, and that the changes were derived entirely from the movement of the population from the country into the towns, and from the introduction of foreigners 230-32

Doxey (Rev. I.)

Suggested that there were various commercial and political circumstances affecting migration, such as those which had transferred the trade of parts of Northamptonshire to adjoining counties, and the shipbuilding trade from the Thames to the Clyde; owing to depression in agriculture the country population had had to go to the towns; and in ascertaining causes of migration these considerations ought to be taken account of . . 232

Hamilton (R.)

Took exception to the use that had been made of the word "law;" a natural law worthy the name could not admit of exceptions; the conditions laid before the Society were but a portion of a very large and intricate question, and would constantly be modified by other facts; thought that in Great Britain there was great difficulty in overcoming the *vis inertia;* the population would remain long under hardship before facing a change . . 233

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RAVENSTEIN (E. G.). *Discussion on his Paper—contd.*

Bourne (S.)

Failed to recognise the use that Mr. Ravenstein had made of the word law. Did not think that there was anything in the way of law to be discovered which regulated the migration of the population from one part of the country to another, unless it was the law of supply and demand. Discussed the case of France, where, though the population was not increasing, there was great increase in the demand for food, indicating that they were employed more in manufactures and less in agriculture. Any investigation of the facts of migration must be valuable, and worthy of the consideration of statesmen and political economists, as helping in determining the future prosperity of the country 233–4

Ravenstein (E. G.), reply:

There were many long distance migrants, but as a rule migrants merely went to neighbouring parishes or counties. Should like to see improvements in taking the census, but still the returns for many years enabled him to say that so many natives of a certain country lived in England. Had intended to deal with migration in foreign countries. He found that in the United States the native-born American moved from place to place as in England; some States overflowed, whilst others were inundated. Had hesitated before using term "law," and merely did so because he could find no other term. All he meant was that migration went on according to certain rules 234

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Importance of grouping national statistics; work of the Italian Government cited in illustration; the "Confronti Internazionali," compiled by Signor Bodio, chief of the Italian Statistical Department, regarded as a mine of statistical wealth 509–10

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Chinese official population statistics unreliable; the numbers have, within last century and a half, ranged from 436 to 363 millions, the general idea probably being that the population is about 400 millions . . . 1
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Summary *table*, from which it appears that by an estimate formed upon known averages in India, the population of China proper would apparently amount to 282 millions, with a general incidence of 183 to the square mile, on an area of 1½ million of square miles 8
Table showing population for each of the eighteen provinces of China (*a*) according to the estimate from Indian averages, and (*b*) according to Chinese official returns, with average per square mile in each case . . 9

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TEMPLE (Sir Richard). *Population Statistics of China—contd.*

General conclusion that Chinese returns, though probably in excess of the reality, are not extravagant. 9

The Central Plateau, with an area of nearly 3 millions of square miles, is estimated to have a population of 15 millions; this has to be added to the foregoing total for China proper, giving a population for the Chinese Empire of 297 millions 9

Discussion on Sir Richard Temple's Paper:

The President (Sir Rawson W. Rawson)

Read note by Sir Rutherford Alcock supporting the authenticity and trustworthiness of Chinese returns, and himself pointed out what were the differences in percentages between Sir R. Temple's estimate founded upon the Indian census and the returns given by the Chinese Government . 10–12

Douglas (Professor)

Regarded censuses taken by the Chinese Government as untrustworthy, and agreed with Sir R. Temple in thinking that the only plan was to adopt the comparative method; he put forward some corrections of Sir R. Temple's figures based on his own knowledge of certain localities . . . 12–14

Hendriks (F.)

Thought that the Chinese must be the best judges of which of their provinces are the most densely peopled, and hesitated to say that the general rough correctness of the Chinese returns was really shaken by Sir R. Temple 15

Jeans (J. S.)

The population of China was mainly agricultural, and if the rule applicable to other agricultural countries was applied to China, it would be found that the soil was scarcely capable of supporting such an enormous number as the official returns represented 16

Walford (C.)

Had hoped to hear more about the river population, which was one of the great problems to be dealt with in arriving at an understanding as to the population of China 16

Boulger (D.)

Thought that the population figures closely approximated those given by Sir R. Temple, but while the standard applied to China might be accurate in the total result, it would probably not be applicable to special provinces, especially those along the valleys of the great rivers and the grand canal; all that could be hoped for was to approximate to the truth . . 17

Martin (J. B.)

Whatever might be the population per square mile in China, the question was how far it pressed on the means of subsistence. Regarded the question of Chinese emigration as one of the utmost importance, and within a generation or two it must command very great attention. The United States seemed to have made up their minds not to admit Chinamen, and in the Australian colonies there was strong feeling to the same effect, but the Chinamen would not be kept out in the end by any restrictions . . 17

The President (Sir Rawson W. Rawson)

Under any circumstances China should be given a larger population than many persons were disposed to admit. In a paper by Sir J. Bowring in the *Journal of the Statistical Society* for March, 1857, there was a report on the population of China, in which it was said that a certain amount of credit must be allowed to the Chinese estimates. In the United Kingdom there were about 300 persons to the square mile, and that rate would give 460 millions for China. Taking the average of British territory in India as 201 to the square mile, it would give 302 millions for China. Holland had 330 persons to the square mile, at which rate China would have 506 millions. In Barbadoes the last census gave 1,033 to the square mile, and they were not crowded as in China. Sir John Bowring's paper would give an idea of the crowding of the people of China. The population would never exist unless there were vast importations of rice and other food from other countries. 18–19

Temple (Sir R.), reply:

Pointed out that there was a large river population in India as well as in China, and he had applied the averages to districts similarly situated. Asiatics were unstatistical, and there was no chance of a Chinese census being of use unless it was revised by Europeans. He proceeded on the assumption that all Chinese authority for statistics had been discredited . 19

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The President (Sir Rawson W. Rawson)

Mr. Giffen being unable on account of illness to complete paper which he had promised, Council had decided to bring before the members the Newmarch Memorial Essay. 461–2

Clarke (Hyde)

Drew attention to the deep interest Mr. Newmarch had taken in the Society, and to the many benefits that had resulted from his work and example . 462–3

Glover (J.)

Remembered the incalculable pleasure and instruction he derived from speeches of Mr. Newmarch, and the fulness of knowledge brought to bear by him on the questions that came up for discussion 463
Referred to the results that have followed the policy of which Mr. Newmarch was an exponent: free trade, the perpetual harvest, cheapening of the means of subsistence 464–5

Chadwick (D.)

Whilst we should adhere to the doctrines of Adam Smith, we should not carry them to an extreme; three elements ought to be considered, (*a*) health and lives should be preserved by provision of healthy houses; (*b*) we should have cheap food; (*c*) cheap and good education 465
Some of Mr. Newmarch's opinions might be considered crotchets, and as impossible to apply at present in practical legislation; essayist would make doctrines of political economy appear objectionable to reasonable people, and encourage disregard of statistical science; our laws during last forty years had been in accordance with the principles of economic science, tempered only by special considerations 466

Howell (G.)

Protested against some of the conclusions in the essay, and denied that many of the legislative enactments were adverse to the doctrines of Adam Smith, though they might be opposed to notions put forward by those who regarded themselves as his disciples 466–7

Pochin (H. D.)

Regretted that Mr. Chadwick had so completely misrepresented Mr. Newmarch's opinions; Mr. Newmarch was one of the last men to withhold from the people, rich or poor, anything that would have promoted their wellbeing, and the principles he most sought after were those that would benefit every class; during the Society's existence many able members had been enrolled, but there was no one whose memory lived so fresh in the affection and gratitude of the Society as that of Mr. Newmarch . . 467–8

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(FOUNDED 1834.)

9, ADELPHI TERRACE,

STRAND, W.C., LONDON.

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Honorary President.

HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G.

COUNCIL AND OFFICERS.—1885-86.

Honorary Vice-Presidents

(having filled the Office of President).

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AN OUTLINE OF THE OBJECTS OF

THE STATISTICAL SOCIETY.

The *Statistical Society* of London was founded, in pursuance of a recommendation of the British Association, for the Advancement of Science, on the 15th of March, 1834; its object being, the careful collection, arrangement, discussion and publication, of facts bearing on and illustrating the complex relations of modern society in its social, economical, and political aspects,—especially facts which can be stated numerically and arranged in tables;—and also, to form a Statistical Library as rapidly as its funds would permit.

The Society from its inception has steadily progressed. It now possesses a valuable Library and a Reading Room; ordinary meetings are held monthly from November to June, which are well attended, and cultivate among its Fellows an active spirit of investigation: the papers read before the Society are, with an abstract of the discussions thereon, published in its *Journal*, which now consists of forty-eight annual volumes, and forms of itself a valuable library of reference.

The Society has originated and statistically conducted many special inquiries on subjects of economic or social interest, of which the results have been published in the *Journal* or issued separately.

To enable the Society to extend its sphere of useful activity, and accomplish in a yet greater degree the various ends indicated, an increase in its numbers and revenue is desirable. With the desired increase in the number of Fellows, the Society will be enabled to publish standard works on Economic Science and Statistics, especially such as are out of print or scarce, and also greatly extend its collection of Foreign works. Such a well-arranged Library for reference, as would result, does not at present exist in England, and is obviously a great *desideratum*.

The Society is cosmopolitan, and consists of Fellows and Honorary Members, forming together a body, at the present time, of nearly *one thousand* Members.

The Annual Subscription to the Society is *Two Guineas*, and at present there is no entrance fee. Fellows may, on joining the Society, or afterwards, compound for all future Annual Subscriptions by a payment of *Twenty Guineas*.

The Fellows of the Society receive gratuitously a copy of each part of the *Journal* as published Quarterly, and have the privilege of purchasing back numbers at a reduced rate. The Library (reference and circulating), and the Reading Room, are open daily, for the convenience of Members.

Nomination Forms and any further information will be furnished, on application to the Assistant Secretary.

CALENDAR FOR SESSION 1885-86.

1885	MON.	TUES.	WED.	THURS.	FRI.	SATUR.	SUN.
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The Ordinary Meetings of the Society, at which Papers are read and discussed, are marked in the Calendar above by **Black Figures.**

The Chair will be taken at 7.45 *p.m., precisely.*

These Meetings are now held, by permission of the Committee of Council on Education, in the **Theatre of the Royal School of Mines, 28, Jermyn Street, S.W.**

THE ANNIVERSARY MEETING

WILL BE HELD ON THE 29TH JUNE, 1886, AT 4 P.M.

STATISTICAL SOCIETY.

MONTHLY MEETINGS—Session 1885-86.

HELD ON THE

THIRD TUESDAY IN THE MONTHS OF NOVEMBER—JUNE.

(except June.)

Tuesday,	Nov. 17.	Tuesday,	March 16.
,,	Dec. 15.	,,	April 20.
,,	Jan. 19.	,,	May 18.
,,	Feb. 16.	,,	June 22.

At the Royal School of Mines, Jermyn Street, S.W.

The following Papers have been read (December, 1885):—

"International Statistics, illustrated by Vital Statistics of Europe, and of some of the United States of America," the PRESIDENT'S Opening Address of the Session. By Sir RAWSON W. RAWSON, K.C.M.G., C.B. (Delivered in November.)

"Preventible Loss of Life at Sea." By THOMAS SCRUTTON, Esq. (Read in December.)

The Council have reason to expect that in the course of the Session the following Papers will, among others, be communicated to the Society:—

"Census Returns; Changes in the Occupations of the People, 1831-81." By CHARLES BOOTH, Esq.

"Colonial and Foreign Tariffs as influencing Prices and affecting Trade." By STEPHEN BOURNE, Esq.

"Additional Notes on the Progress of the Working Classes." By ROBERT GIFFEN, Esq., LL.D.

"Recent Lunacy Statistics, with Special Reference to the asserted Increase of Insanity." By NOEL A. HUMPHREYS, Esq.

"The Progress of Joint Stock Companies with Limited and Unlimited Liability in the United Kingdom during the Fifteen Years 1869-84." (In continuation of a Paper read before the Society in January, 1870.) By Professor LEONE LEVI, LL.D.

"The Statistics of Suicide in England and Wales." By Dr. WILLIAM OGLE.

"Some Statistics of the Suez Canal." By JOSEPH RABINO, Esq.

"The Price of Food, and the Rates of Wages in Berlin, Paris, and London, their Influence on the State of Trade in England." By Captain M. P. WOLFF.

Visitors may attend the Monthly Meetings on the introduction of a Fellow.

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Vol XXXVI. (1873.)	1	–	–
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Vol. XXXVIII. (1875.)	1	–	–
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By a resolution of the Council, dated 12th May, 1854, the price of back numbers of the *Journal* of the Society, charged to Members, was raised from one-half to three-fifths of the publishing price.

NOTE.—One or two numbers of the *Journal* are now out of print.

LIST OF THE FORMER

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OF THE

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From its Foundation, on 15th March, 1834.

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	Period.
His Royal Highness The Prince Consort, K.G.	1840–61

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The Most Noble the Marquis of Lansdowne, F.R.S.	1834–36
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The Right Hon. the Earl Fitzwilliam, F.R.S.	1847–49
The Right Hon. the Earl of Harrowby	1849–51
The Right Hon. the Lord Overstone	1851–53
The Right Hon. the Earl Fitzwilliam, K.G., F.R.S.	1853–55
The Right Hon. the Earl of Harrowby, K.G., D.C.L.	1855–57
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The Right Hon. George Shaw Lefevre, M.P.	1877–79
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Robert Giffen, Esq., LL.D.	1882–84

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Year of Election.	
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1876	Abrahams, Israel, F.R.G.S., 43, *Sutherland-gardens, Harrow-road, W.*
1870	Absolon, Eugene, 12, *Wellington-square, King's-road, Chelsea, S.W.*
1883	Ace, Rev. Daniel, D.D., F.R.A.S., *Laughton Vicarage, Gainsborough.*
1862	Acland, Sir Henry Wentworth, K.C.B., M.D., F.R.S., *Oxford.*
1869	Acland, The Rt. Hon. Sir Thomas Dyke, Bart., M.P., *Killerton, Exeter; and Athenæum Club, S.W.*
1879	Adam, Robert (*City Chamberlain*), *City Chambers, Edinburgh.*
1867	Addison, John, *Colehill Cottage, Fulham, S.W.*
1884	Agius, Edward Tancred, 90, *Belsize-park-gardens, N.W.*
1880	Aitchison, David, 5, *Pembridge-square, W.*
1876	Aitchison, William John, 2, *Princes-street, E.C.*
1885	Aitken Thomas, 75, *George-street, Edinburgh.*
1879	Akers-Douglas, Aretas, M.P., J.P., *Chilston Park, Maidstone, Kent.*
1841	Aldam, William, F.R.S., *Frickley Hall, Doncaster.*
1876	Aldwinckle, Thomas Williams, 2, *East India-avenue, Leadenhall-street, E C.*
1883	Alexander, Alfred Joseph, 103, *Pembroke-road, Clifton, Bristol.*
1872	Alexander, Robert Henry, 24, *Lombard-street, E.C.*

Year of Election.	
1876	Allen, John T. R., 13, *York-road, Hove, Brighton.*
1875	Allen, Joseph, *St. Mildred's House, Poultry, E.C.*
1877	Allen, Joseph, *West Riding Chambers, Halifax, Yorkshire.*
1871	Anderson, Sir James, F.R.G.S., F.G.S., 50, *Old Broad-street, E.C.*
1871	Angus, R. B., *Montreal, Canada.*
1884	Anning, Edward James, 78, *Cheapside, E.C.*
1885	Antonio, John, 39, *Dame-street, Dublin.*
1872	*Archibald, William Frederick A., M.A., 3, *Amersham-road, Putney, S.W.*
1883	Aschenheim, Gustav, 27, *Mincing-lane, E.C.*
1884	Ashwell, Henry, *Woodthorpe Grange, Sherwood, Notts.*
1883	Askey, Frederick Day, *The Park, Highgate, N.*
1871	Atkinson, George W., 1, *Regent-street, Barnsley.*
1870	Avery, Thomas, *Church-road, Edgbaston, Birmingham.*
1872	*Babbage, Major-General Henry Prevost, *Yorkleigh, Bayshill, Cheltenham.*
1872	*Backhouse, Edmund, *Middleton Lodge, Richmond, York.*
1879	Baden-Powell, George, C.M.G., M.P., (*Secretary,*) 8, *St. George's-place, Hyde Park Corner, S.W.*
1885	Bagenal, Philip H., 33, *Abingdon-villas, Kensington, W.*
1855	Bailey, Arthur Hutcheson, F.I.A., 7, *Royal Exchange, E.C.*
1858	Baines, Sir Edward, *St. Ann's-hill, Burley, Leeds.*
1881	Baines, Jervoise Athelstane, C.S., *Dhárwár, Bombay Presidency, India.*
1882	Baker, Daniel, 104, *Colmore-row, Birmingham.*

Year of Election.	
1884	Baker, George, 12, *Burwood-place*, *W.*
1879	Baker, W. Mills, *The Holmes*, *Stoke Bishop*, *near Bristol.*
1884	Baldwin, Edmund Chaplin,
1885	Balfe, Richard Ambrose, 2, *Foster-place*, *Dublin.*
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1848	Balfour, General Sir George, K.C.B., M.P., D.L., 6, *Cleveland-gardens*, *Bayswater*, *W.*
1873	Balfour, Jabez Spencer, 20, *Budge-row*, *Cannon-street*, *E.C.*
1865	Balfour, T. Graham, M.D., F.R.S., *Coombe Lodge*, *Wimbledon-park*, *S.W.*
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1884	Barlow, William Henry, F.R.S., C.E., 2, *Old Palace-yard*, *S.W.*
1885	Barratt, Thomas J., 38, *Great Russell-street*, *W.C.*
1881	*Barrington-Kennett, Vincent B., M.A., LL.M., Cantab., 15, *Hyde Park-gardens*, *W.*
1883	Barron, Thomas Walter, M.A., M.B., M.R.C.S., &c., 10, *Old Elvet*, *Durham.*
1878	Barry, Francis Tress, *St. Leonard's-hill*, *Windsor.*
1879	Barry, Frederick W., M.D., *Local Government Board*, *Whitehall*, *S.W.*
1881	Bartlett, Robert Vincent Osborne, *Richmond Villa*, *Castle-road*, *Newport*, *Isle of Wight.*
1872	*Bass, Sir Michael Arthur, Bart., M.P., 101, *Eaton-square*, *S.W.*; *Rangemore*, *Burton-on-Trent.*
1873	Bate, George, 37, *Bath-street*, *Glasgow.*
1877	Bateman, Alfred Edmund (*Secretary*), *Board of Trade*, *Whitehall-gardens*, *S.W.*
1876	Baxter, Robert, 6, *Victoria-street*, *Westminster*, *S.W.*
1877	Bayfield, Arthur, 32, *Temple-row*, *Birmingham.*
1873	*Baynes, Alfred Henry, F.R.G.S., 19, *Castle-street*, *Holborn*, *E.C.*
1871	*Baynes, William Wilberforce, F.I.A., 32, *Moorgate-street*, *E.C.*

Year of Election.	
1877	Beadel, William J., M.P., *Springfield Lyons, Chelmsford.*
1875	*Beardsall, Francis E. M., 44, *Brown-street, Manchester.*
1878	*Beauchamp, The Right Hon. Earl, 13, *Belgrave-square, S.W.*
1875	*Beaufort, William Morris, F.R.A.S., F.R.G.S., &c, 18, *Piccadilly, W.*
1883	Beaumont, Henry *Gordon Villa, The Park, Highgate, N.*
1882	*Beazeley, Michael Wornum, 3, *St. Paul's-road, Thornton Heath, Surrey.*
1883	Beckingham, James Horace, 48, *Percy Park, Tynemouth, Northumberland.*
1880	Beddell, Charles,
1872	*Bedford, His Grace, the Duke of, *Woburn Abbey, Oakley, Bedford.*
1884	Bedford, James, *Woodhouse Cliff, Leeds.*
1882	*Beeton, Henry Ramie, 42, *Belsize-square, South Hampstead, N.W.*
1884	Begg, Alexander, 88, *Cannon-street, E.C.*
1879	Beggs, Thomas, *Hazeldene, Shortlands, Kent.*
1880	Bell, Sir Isaac Lowthian, Bart., J.P., *Rounton Grange, Northallerton, York, N.R.*
1884	Bell, James T., 3, *Great Kelvin-terrace, Hillhead, Glasgow.*
1883	Bennoch, Francis, F.S.A., 5, *Tavistock-square, W.C.*
1884	*Bentley, Richard, F.R.G.S., *Upton, Slough, Bucks.*
1856	*Beresford-Hope, The Right Hon. Alexander J., M.P., D.C.L., 1, *Connaught-place, W.*
1884	Berg, Wilhelm, 37, *Mincing-lane, E.C.*
1884	Bernard, W. Leigh, 1, *New-court, Lincoln's-inn, W.C.*
1874	Bessborough, The Right Hon. The Earl of, *Bessborough, Pilltown, Ireland.*
1881	Besso, Marco, *Compagnia di Assicurazioni Generali, Trieste.*
1879	Bevan, G. Phillips, D.L., F.G.S.,
1875	Bevan, Thomas, *Stone Park, near Dartford, Kent.*
1869	*Beverley, Henry, *United Service Club, Calcutta.*

Year of Election.

1879 *Bickford-Smith, W., J.P., D.L., &c.,
Trevarno, Helston, Cornwall.

1883 Binney, William,
13, *St. Helen's-place, E.C.; Hillfield, Hampstead, N.W.*

1884 Birch, Robert W. Peregrine, M. Inst. C.E.,
2, *Westminster-chambers, Victoria-street, S.W.*

1883 Birchenough, Henry, M.A.,
145, *Cheapside, E.C.*

1881 Bishop, George,
131, *Powis-street, Woolwich.*

1877 Bishop, George Houlton, M.R.C.S.,
47, *Argyle-road, Castle-hill, Ealing, W.*

1885 Blackley, The Rev. Canon William Lewery, M.A.,
King's Somborne Vicarage, Stockbridge, Hants.

1883 Blades, R. H.,
23, *Abchurch-lane, E.C.*

1883 Blades, William,
23, *Abchurch-lane, E.C.*

1884 Boileau, John P. H., M.D., &c. (*Surgeon-Major*),
Army Medical Staff, Subathu, Panjab, Bengal, India.

1881 Bolitho, Thomas Robins,
Pendrea, near Penzance.

1880 Bolton, Joseph Cheney, M.P.,
Carbrook, Larbert, Stirlingshire.

1885 Bonar, James, M.A.,
Civil Service Commission, Westminster, S.W.

1885 Booth, Charles,
6, *Grenville-place, S.W.*

1885 Bordman, Emanuel Linden,
Victoria House, Trinity-street, S.E.

1879 Bordman, Thomas Joseph Clarence Linden, LL.D.,
Victoria House, Trinity-street, Southwark, S.E.

1875 Borthwick, The Right Hon. Lord,

1881 Bourdillon, James Austin,
United Service Club, Calcutta.

1881 Bourinot, John George,
Ottawa, Canada.

1871 Bourne, Stephen,
H.M. Custom House, E.C.; Abberley, Wallington, Surrey.

1877 Boutcher, Emanuel,
36, *Hyde Park-gardens, W.*

1885 Bovell, The Hon. Henry A., LL.B.,
Erin Hall, Barbados, West Indies.

1883 Bovey, John,
Bute Docks, Cardiff, and Glenholm, Penarth, Cardiff.

1876 Bowen, Horace George,
Bank of England, E.C.

1879 Bowley, Edwin,
Burnt Ash-hill, Lee, Kent.

Year of Election.	
1880	Bowser, Wilfred Arthur, 33, *New Bridge-street, E.C.*
1883	Braby, Frederick, F.C.S., F.G.S., *Bushey Lodge, Teddington.*
1875	Braby, James, J.P., *Maybanks, Rudgwick, Sussex.*
1874	Bramley-Moore, John, D.L., *Gerrard's-cross, Bucks.*
1873	Brassey, Sir Thomas, K.C.B., M.A., M.P., (*Honorary Vice-President*), 4, *Great George-street, S W.; and* 24, *Park-lane, W.*
1864	*Braye, The Right Hon. the Lord, 40, *Grosvenor-street, W.; and Stanford Hall, Rugby.*
1884	Breckon, John Robert, 32, *Fawcett-street, Sunderland.*
1883	Briesemann, Francis, *Whittington-avenue, Leadenhall-street, E.C*
1883	Brindle, Thomas, *North Bank, Tunbridge Wells.*
1883	Broad, Harrington Evans, 35, *Walbrook, E.C.*
1876	Brodhurst, Bernard Edward, F.R.C.S., 20, *Grosvenor-street, Grosvenor-square, W.*
1883	Brooke, C. B., 16, *Leadenhall-street, E.C.*
1874	Broom, Andrew, A.C.A., 12, *Wilton-terrace, The Grove, Camberwell, S.E.*
1878	Brown, Alexander Hargreaves, M.P., 12, *Grosvenor-gardens, S.W.*
1885	Brown, David, 147, *Leadenhall-street, E.C.*
1872	Brown, James Bryce, F.R.G.S., 90, *Cannon-street, E.C.; and Bromley, Kent.*
1875	Browne, Thomas Gillespie C., F.I.A., 11, *Lombard-street, E.C.*
1884	Browne, Willis, *Funds Department, India Office, Westminster, S.W.*
1883	Buck, E. C., *Revenue and Agricultural Department, Simla, India.*
1865	Bunce, John Thackray, *Longworth, Priory-road, Edgbaston, Birmingham.*
1884	Burbridge, Samuel,
1880	Burdett, Henry Charles, *The Lodge, Porchester-square, W.*
1873	*Burdett-Coutts, The Right Hon. the Baroness, 1, *Stratton-street, W.; and Holly Lodge, Highgate, N.*
1884	Burdett-Coutts, William, M.P., 1, *Stratton-street, Piccadilly, W.*

Year of Election.	
1882	Burgess, John, *Prospect House, Hailsham.*
1872	Burns, The Rev. Dawson, M.A., D.D., 15, *Great George-street, Westminster, S.W.*
1885	Burridge, Arthur Francis, F.I.A., 46, *Bath-road, Bedford Park, Chiswick*
1885	Burridge, Stephen, *Messrs. John Brown & Co., Sheffield.*
1880	Burt, Frederick, F.R.G.S., *Woodstock, Crouch End, N.*
1883	Bush, William John, 20, *Artillery-lane, Bishopsgate street, E.C.*
1882	Butchart, Robert G.,
1884	Buxton, Sydney Charles, 15, *Eaton-place, S.W.*
1880	Caine, William Sproston, 1, *The Terrace, Clapham Common, S.W.*
1857	Caird, Sir James, K.C.B., F.R.S. (*Honorary Vice-President and Trustee*), 8, *Queen's-gate-gardens, S.W.; & Cassencary, Creetown, N.B.*
1880	Caird, Robert Henryson, 6, *Petersham-terrace, S.W.*
1874	Campbell, Sir George, K.C.S.I., M.P., D.C.L., 17, *Southwell-gardens, South Kensington, S.W.*
1877	Campbell, George Lamb, *Market-street, Wigan.*
1879	Campbell-Colquhoun, Rev. John Erskine, *Chartwell, Westerham, Kent.*
1884	Card, Henry Curtis, F.S.I., *County Surveyor's Office, Lewes.*
1881	Carden, Lionel Edward Gresley (*H.M. Consul*),
1872	*Carillon, J. Wilson, F.S.A., F.R.G.S., 14, *Dynevor-road, Richmond, Surrey.*
1885	Carmichael, Thomas D. Gibson, *Castlecraig, Dolphinton, N.B.*
1871	Carnac, H. Rivett,
1876	Carphin, James Rhind, C.A., 14, *Hanover-street, Edinburgh.*
1877	Carter, E. Harold, 33, *Waterloo-street, Birmingham.*

Year of Election	
1883	Carter, Joseph Robert, *Bessel's Green, Sevenoaks.*
1878	*Casley, Reginald Kennedy, M.D., *Northgate-street, Ipswich.*
1885	Casson, William A., *Local Government Board, Whitehall, S.W.*
1880	Castle, Robert, 18, *Merton-street, Oxford.*
1883	Cater, J. J., 39, *Lombard-street, E.C.*
1883	Cattarns, Richard, *Enfield House, Grove Park, Lee, S.E.*
1881	Causton, Richard Knight, 3, *Clanricarde-gardens, W.*
1858	Chadwick, David, *The Poplars, Herne Hill, Dulwich, S.E.*
1834	Chadwick, Edwin, C.B. (*Corr. Mem., Inst. of France*) *Park Cottage, East Sheen, Mortlake, S.W.*
1869	Chadwick, John Oldfield, F.R.G.S., 24, *Budge-row, Walbrook, E.C.*
1884	Chailley, Joseph, 9, *Rue Guy de la Brosse, Paris.*
1880	*Chamberlain, The Right Honourable Joseph, M.P., 40, *Prince's-gardens, S.W.*
1884	Chater, J., *c/o* Patrick McGuire, 57, *Amherst-street, Calcutta.*
1851	*Cheshire, Edward, 3, *Vanbrugh Park, Blackheath, S.E.*
1883	Childs, Walter, 16, *Oxford-gardens, North Kensington, W.*
1853	Chisholm, David, F.I.A., 9, *Rillbank-terrace, Edinburgh.*
1869	Chubb, Hammond, B.A., *Bickley, Kent.*
1849	Clark, Gordon Wyatt, *Mickleham Hall, near Dorking, Surrey.*
1856	Clark, Sir John Forbes, Bart., *Tillypronie, Tarland, Aberdeen.*
1884	Clark, Robert, 223, *Cromwell-road, S.W.*
1882	Clarke, Arthur Edward,
1871	Clarke, Ebenezer, jun., 52, *Cannon-street, E.C.*
1882	*Clarke, Ernest, *Share and Loan Department, Stock Exchange, E.C.*
1880	Clarke, Frederick Nevill, *Oakwood, Fountain-road, Upper Norwood, S.E.*
1877	*Clarke, Henry, L.R.C.P., *H.M. Prison, Wakefield, Yorks.*

Year of Election.	
1876	Clarke, Henry Harcourt Hyde, 32, *St. George's-square, S.W.*
1856	*Clarke, Hyde, 32, *St. George's-square, S.W.*
1869	Cleghorn, John, 3, *Spring-gardens, S.W.*
1850	*Cleveland, His Grace the Duke of, K.G., *Battle Abbey, Sussex.*
1853	Clirehugh, William Palin, F.I.A., 66, *Cornhill, E.C.*
1877	Cobb, B. Francis, 79, *Cornhill, E.C.*
1873	Cockle, Captain George, F.R.G.S., 9, *Bolton-gardens, South Kensington, S.W.*
1884	Cockshott, John James, 3, *Tulketh-street, Chapel-street, Southport.*
1877	Cohen, Lionel Louis, M.P., 9, *Hyde Park-Terrace, W.*
1838	Colebrooke, Sir Thomas Edward, Bart., *Athenæum Club, S.W.*
1859	Coles, John, F.I.A., 39, *Throgmorton-street, E.C.*
1874	Collinson, John, F.R.G.S., 90, *Cromwell-road, S.W.*
1883	Collmann, John S., 12, *Tokenhouse-yard, E.C.*
1882	*Collum, Rev. Hugh Robert, M.R.I.A., F.R.C.I., *Vicar of Leigh, near Tonbridge, Kent.*
1867	Colman, Jeremiah James, M.P., *Carrow House, Norwich.*
1878	Colomb, Captain J. C. R., R.M.A., J.P., *Droumquinna, Kenmare, Kerry.*
1884	Colyar, Henry Anselm De, 24, *Palace-gardens-terrace, W.; and Athenæum Club, S.W.*
1884	Cook, Edward Samuel (Cook & Philpot), 60, *Queen Victoria-Street, E.C.*
1879	Cooke, Isaac B., 8, *Wellington-road, Oxton, Birkenhead.*
1874	*Cookson, Faithful, F.R.G.S., 2, *Threadneedle-street, E.C.*
1843	*Copperthwaite, William Charles, *New Malton, Yorkshire.*
1874	Corbett, John, M.P., 20, *Hertford-street, Mayfair, W.*
1883	Corgialegno, M., 71, *Cornhill, E.C.*
1873	Cork, Nathaniel, F.R.G.S., 39, *Lombard-street, E.C.*
1878	Cornish, William Robert, F.R.C.S. (*Surgeon Major*), *Messrs. King & Co.*, 45, *Pall Mall, S.W.*

Year of Election.

1883 Cosens, Frederick William,
7, *Melbury-road, Kensington, W.*

1862 Courtney, Leonard Henry, M.A., M.P.,
15, *Cheyne Walk, Chelsea, S.W.*

1882 Cowen, Charles,
37, *Main-street, Port Elizabeth, Cape of Good Hope.*

1873 Cowper, The Hon. Henry Frederick,
4, *St. James's-square, S.W.*

1885 Craddock, Joseph,
Oak Lea, Cannock, near Stafford.

1880 Craig, William Young,
Westminster Palace Hotel, Westminster, S.W.

1874 Craigie, Major Patrick George,
6, *Lyndhurst-road, Hampstead, N.W.*

1870 Craik, George Lillie,
29, *Bedford-street, Strand, W.C.*

1883 Cranwell, W. B.,
42, *Portsdown-road, W.; and* 9, *New Broad-street, E.C.*

1872 Crellin, Philip,
33, *Chancery-lane, W.C.*

1883 Crew, J. Lewis,
113, *Arch-street, Philadelphia, Pennsylvania, U.S.A.*

1878 Crewdson, Ernest,
5, *Norfolk-street, Manchester.*

1880 *Crompton-Roberts, Charles H.
16, *Belgrave-square, S.W.*

1885 Cropper, James,
Ellergreen, Kendal.

1883 Cullen, Thomas, F.C.A.
21, *Warwick-street, Regent-street, W.*

1875 Cunningham, David, C.E.,
Works' Office, Harbour-chambers, Dundee.

1883 Cunningham, Rev. William, M.A.,
2, *St. Paul's-road, Cambridge.*

1884 Curtis, Charles, Edward,
Deanyers, Alton, Hants.

1879 Curtis, Robert Leabon, F.S.I.,
120, *London Wall, E.C.*

1873 Czarnikow, Cæsar,
Mitcham, Surrey.

1869 Dalyell, The Hon. Robert Anstruther, C.S.I.,
India Office, Westminster, S.W.

1884 Daniell, Clarmont J.,
Agra, India, c/o H. S. King & Co., 65, *Cornhill, E.C.*

Year of Election.	
1880	Danvers, Frederick Charles, *India Office, Westminster, S W.*
1873	Danvers, Juland, *India Office, Westminster, S.W.*
1885	Davidson, Madgwick Spicer, 28, *Prince's-square, W.*
1869	Davies, James Mair, *Chambers*, 69, *West Regent-street, Glasgow.*
1874	Davies, William Henry, 51, *Tregunter-road, S.W.*
1876	Day, William Ansell, *Lyndhurst House, Hendon, N.W.*
1880	Debenham, Frank, 26, *Upper Hamilton-terrace, St. John's Wood, N.W.*
1885	De Broë, Emile Conrad De Bichin, 14, *Birdhurst Hill, East Hill, Wandsworth, S.W.*
1879	*De Ferrieres, The Baron Du Bois, J.P., *Bay's-hill House, Cheltenham.*
1884	De Jouy, J. Henry B., *La Prefecture, Quimper, Finisterre, France.*
1883	De Keyser, Alderman Polydore, *Chatham House, Grove-road, Clapham Park, S.W.*
1877	Deloitte, William Welch, 4, *Lothbury, E.C.*
1873	Dent, Clinton Thomas, F.R.C.S. 19, *Savile-row, W.*
1873	Dent, Edward, *Fernacres, Fulmer, near Slough, Bucks.*
1855	*Derby, The Right Hon. the Earl of, F.R.S., D.C.L. (*Honorary Vice-President*), *St. James's-square, S.W.; Knowsley, Prescot, Lancashire*
1884	Dethridge, J. Frank, *The Hermitage, Ravenscourt-park, W.*
1877	Dever, Henry, 4, *Lothbury, E.C.*
1885	Devonshire, Thomas Harris, 1, *Frederick's-place, Old Jewry, E.C.*
1877	De Worms, Baron Henry, M.P., F.R.A.S., *Carlton Club, S.W.*
1885	Dibley, George, Jun., 22, *Brook-street, Grosvenor-square, W.*
1884	Dickson, Donald William, 39, *Lombard-street, E.C.*
1866	*Dilke, Sir Charles Wentworth, Bart., M.P., LL.M., 76, *Sloane-street, S.W.*
1881	Dillon, Malcolm,
1873	Dixon, George, M.P., *The Dales, Edgbaston, Birmingham.*

Year of Election.

1881 Dobell, Richard R.,
Quebec, Canada.

1875 Doxsey, Rev. Isaac,
186, *The Grove, Camberwell, S.E.*

1878 Doyle, Patrick, C. E., F.G.S., M.R.A.S.,
c/o Rev. J. Doyle, *R. C. Cathedral, Black Town, Madras.*

1878 Duignan, William Henry,
Walsall, Staffordshire.

1875 Dun, John,
Parr's Banking Company Limited, Warrington.

1870 Duncan, James,
9, *Mincing-lane, E.C.*

1884 Dunn, Archibald Joseph,
6, *Westgate-terrace, South Kensington, S.W.*

1878 *Dunraven, The Right Hon. Earl of, K.P.,
Kenry House, Putney Vale, S.W.

1885 Dyer, William John,
17, *Montpelier-row, Blackheath, S.E.*

1883 Edgeworth, Francis Ysidro, M.A.,
Savile Club, 107, *Piccadilly, W.*

1836 Edmonds, Thomas Rowe, B.A.,
72, *Portsdown-road, Maida-vale, W.*

1869 Edmonds, William,
Annesley House, Southsea.

1880 Egerton of Tatton, The Right Honourable The Lord,
7, *St. James's-square, S.W.*

1883 Eley, Charles,
201, *Mansion House Chambers, Queen Victoria-st., E.C.*

1872 Elliot, Sir George, Bart.,
Park-street, Park-lane, W.

1885 Elliott, Thomas Henry,
Inland Revenue Office, Somerset House, W.C.

1885 Elliott, William,
5, *Westmoreland-street, Dublin.*

1885 Elliott, William Henry,
44, *Mansion House-chambers, Queen Victoria-street, E.C.*

1877 Ellis, Arthur,
42, *High-street, Highgate, N.*

1883 Ellis, Alderman Sir John Whittaker, Bart., M.P.
21, *Hertford-street, Mayfair, W.*

1873 Emanuel, Lewis,
22, *St. Stephen's-square, Bayswater, W.*

Year of Election	
1877	Emmott, W. T., *Blackfriars-street, Manchester.*
1882	Essex, Benjamin Smily, 446, *Strand, W.C.*
1879	Evans, Henry Jones, J.P., *Brecon Old Bank, Cardiff.*
1834	Eversley, The Right Hon. Viscount, D.C.L., LL.D., 114, *Eaton-square, S.W.; and Winchfield, Hants.*
1875	Faraday, Frederick J., 17, *Brazenose-street, Manchester.*
1874	Farmer, James, 6, *Porchester-gate, Hyde Park, W.*
1868	Farrell, John Douglas, *Bank of England, West Branch, Burlington-gardens, W.*
1878	Farren, George, J.P., A.M.Inst.C.E., *Carnarvon.*
1878	Farrer, Sir Thomas Henry, Bart., *Board of Trade, Whitehall Gardens, S.W.*
1876	Fearnside, Henry, M.B., F.R.C.P., *De Vere Mansions West*, 34, *De Vere-gardens, W.*
1882	Fell, Arthur, M.A., 46, *Queen Victoria-street, E.C.*
1864	Fellows, Frank Perks, 8, *The Green, Hampstead, N.W.*
1884	Felton, George Frederick, 6, *Church-walks, Llandudno, North Wales.*
1874	Ferguson, A.M., "*Ceylon Observer*" *Office, Colombo, Ceylon.*
1885	Ferguson, Ronald Crawfurd Munro, 23, *Arlington-street, S.W.; and Raith, Kirkcaldy, N.B.*
1880	Finch, George Henry, M.P., *Burley-on-the-hill, Oakham.*
1880	Findlay, George, *London and N. Western Railway, Euston Station, N.W.*
1884	Findlay, James Arbuckle, *Bishops Stortford, Herts.*
1880	Finlaison, Alexander John, F.I.A., 19, *Old Jewry, E.C.*
1884	*Finnemore, Robert Isaac, F.R.G.S., &c. *Durban, Natal, South Africa.*
1885	Fitzgerald, William George, M.A., 5, *Adelaide-terrace, Kingstown, Co. Dublin.*
1884	Fitzmaurice, Lord Edmond G., 12, *Arlington-street, S.W.*

Year of Election.	
1882	Foley, Patrick James, M.P., *Pearl Ins. Co., Adelaide-place, London Bridge, E.C.*
1878	Follett, Charles John, M.A., B.C.L., *H.M. Custom House, E.C.*
1875	Fordham, Edward King, J.P., D.L. *The Bury, Ashwell, Baldock, Herts.*
1841	Fortescue, The Right Honourable Earl, *Castle Hill, South Molton, Devon.*
1884	Fosbery, William Thomas Exham. *The Castle-park, Warwick.*
1885	Foster, J. Collie, 37, *Gower-street, W.C.*
1877	*Fowler, Alderman Sir Robert Nicholas, Bart., M.P., *Elm Grove, Corsham, Wilts.*
1868	Fowler, William, 38, *Grosvenor-square, S.W.*
1878	Foxwell, Professor Herbert Somerton, M.A., *St. John's College, Cambridge.*
1879	Francis, George Edward, *Staunton Coleford, Gloucestershire.*
1882	Fraser, D. Manson, M.A., M.D., *c/o of D. Fraser, Esq., Invergordon, Ross, N.B.*
1883	Fraser, George J., 34, *Leadenhall-street, E.C.*
1844	*Freeland, Humphrey William, J.P., *Athenæum Club, S.W.; and Chichester.*
1884	Frith, Walter Halsted, 69, *Lombard-street, E.C.*
1878	Fuller, William Palmer, 50, *Gresham-street, E.C.*
1879	Fung, Yee,
1879	Gairdner, Charles, *Broom, Newton Mearns, Renfrewshire.*
1881	Gale, James Thomas, 10, *Kersley-street, Battersea-park, S.W.*
1852	Galsworthy, Edwin Henry, J.P., F.I.A., 18, *Park-crescent, Portland-place, W.*
1873	*Galton, Capt. Douglas, R.E., C.B., LL.D., F.R.S., 12, *Chester-street, Grosvenor-place, S.W.*
1860	Galton, Francis, F.R.S., F.R.G.S., 42, *Rutland-gate, S.W.*

Year of Election.

1881 GARNETT, FREDERICK BROOKSBANK,
4, *Argyll-road, Kensington, W.*

1881 Garraway, The Hon. David G.,
Castries, St. Lucia, West Indies.

1879 *Gassiot, John Peter, J.P.,
The Culvers, Carshalton, Surrey,

1872 Gastrell, Major-General J. E.,
Lansdowne-road, Bedford.

1883 Gates, Jacob S.,
9, *Fenchurch-avenue, E.C.*

1880 *Gates, John Benjamin, jun., A.C.A.,
47, *Warwick-street, Regent-street, W.*

1881 *Gatty, William Henry,
Market Harborough, Leicestershire.

1885 Gibb, George S.,
North-Eastern Railway Company, York.

1872 Gibb, Thomas Eccleston, M.P.,
16, *Lady Margaret-road, N.W.*

1874 Gibbs, Alban George Henry,
82, *Portland-place, W.*

1871 Gibbs, George Sleight,
Derry Lodge, Darlington.

1882 Gibbs, Richard,
The Hollies, Weybridge.

1867 *GIFFEN, ROBERT, LL.D. (*Honorary Vice-President*),
44, *Pembroke-road, Kensington, W.*

1877 Gilbert, William H. Sainsbury,
9, *Old Jewry, E.C.*

1878 *Glanville, Silvanus Goring,
238, *Lewisham High-road, S.E.*

1860 GLOVER, JOHN (*Vice-President*),
88, *Bishopsgate-street Within, E.C.*

1884 Glover, Thomas Rigbye,

1877 Goddard, Frederick Robertson,
19, *Victoria-square, Newcastle-on-Tyne.*

1884 Gonner, Edward C., B.A.,
57, *Finchley New-road, N.W.*

1877 Good, Alfred,
57, *Moorgate-st., E.C.; Downe Lodge, Beckenham, Kent.*

1881 Goodrich, S. G.,
P.O. Box 1147, *New York City, New York, U.S.A.*

1885 Goodsall, David Henry, F.R.C.S.,
17, *Devonshire-place, W.*

1868 Göschen, The Right Hon. George Joachim, M.P.,
69, *Portland-place, W.*

1855 *Gosset, John Jackson,
Thames Ditton, Surrey.

1885 Goulding, William Purdham, F.S.I.,
41, *Moorgate-street, E.C.; and* 18, *Mercers-road, N.*

Year of Election.	
1853	Gover, William Sutton, F.I.A., 4, *Queen-street-place, Southwark Bridge, E.C.*
1876	Grahame, James, C.A., 12, *St. Vincent-place, Glasgow.*
1885	Grant, Thomas R., 54, *Harrington-gardens, Kensington, S.W.*
1875	Granville, Joseph Mortimer, M.D., F.G.S., &c., 18, *Welbeck-street, Cavendish-square, W.*
1847	Gray, Thomas, 34, *Fenchurch-street, E.C.*
1877	Greene, William Thomas, M.A., M.D., *Moira House, Peckham Rye, S.E.*
1881	Greening, William H., *Oakfield Cottage, Balsall Heath, Birmingham*
1883	Griffin, Josiah, *Vanburgh Park, Blackheath, S.E.*
1868	Griffith, Edward Clifton, 1, *Waterloo-place, S.W.*
1884	Griffith, T. Risely, *Colonial Secretary, Sierra Leone.*
1882	Griffiths, Ebenezer, 166, *St. John's-road, Hornsey Rise.*
1883	Grimshaw, Thomas Wrigley, M.D., M.A., &c. (Registrar-General of Ireland), *Priorsland, Carrickmines, Co. Dublin.*
1883	Gunther, Charles, 9, *Fenchurch-avenue, E.C.*
1875	Gunn, Arthur, 31, *Gloucester-road, Gloucester-gate, Regent's Park, N.W.*
1878	Guthrie, Charles, *London Chartered Bank of Australia, Melbourne, Victoria.*
1885	Guthrie, Edwin, *Victoria Park, Manchester.*
1880	*Gwynne, James Eglinton A., J.P., F.S.A., 97, *Harley-st., W.; Folkington Manor, Polegate, Sussex.*
1884	Haas, Hendrik Christiaan, 60, *Mark-lane, E.C.*
1884	Hadley, Joseph, 5, *Argyll-place, Regent-street, W.*
1883	Hadrill, Henry John, 60, *Mark-lane, E.C.*
1873	*Haggard, Frederick T., *The Grove, East Burnham, near Slough.*
1884	Hague, John, *King-street, Toronto, Canada.*

Year of Election.	
1869	Hall, James Macalester, *Killean House, Tayinloan, Argyleshire.*
1883	Hall, Sir John, K.C.M.G., *c/o Agent-General for New Zealand, 7, Westminster Chambers, Victoria-street, S.W.*
1878	Hallett, T.G.P., M.A., *Claverton Lodge, Bath.*
1873	Hamilton, The Right Hon. Lord George Francis, M.P., *17, Montagu-street, Portman-square, W.*
1883	Hamilton, James Thomas, *23, High-street, Southampton.*
1882	Hamilton, John, *Junior Carlton Club, Pall Mall, S.W.*
1882	Hamilton, John James, *The Grange, Chislehurst.*
1879	Hamilton, Rowland, *Oriental Club, Hanover-square, W.*
1884	*Hammersley, Hugh Greenwood, *Sun House, 6, Chelsea Embankment, S.W.*
1855	Hampden, The Right Hon. Viscount, G.C.B.,
1873	Hanbury, Robert William, M.P., *Ham Hall, Ashbourne, Derbyshire.*
1885	*Hancock, Charles, M.A., Oxon., 2, *Cloisters, Temple, E.C.; and Reform Club, S.W.*
1869	Hancock, William, 35, *Cornhill, E.C.*
1875	Hankey, Ernest Alers, *Elmhurst, Bickley-park, Kent.*
1879	Hankey, Thomson, 59, *Portland-place, W.*
1876	Hansard, Luke, 68, *Lombard-street, E.C.*
1883	Hansell, Robert B., *Moor Oaks-road, Broomhill, Sheffield.*
1885	Harbhamji, Prince, of Morbi, *Rajcoomar College, Rajkow, Kattraward, Bombay, India.*
1871	*Harcourt, Right Hon. Sir William Vernon, Q.C., M.P., F.R.S., 7, *Grafton-street, Bond-street, W.*
1877	Harding, Colonel Charles, F.R.G.S., 10, *St. Swithin's-lane, E.C.*
1883	Harding G. P., *La Chaumiere, Trouville, France; and 5, Austin Friars, E.C.*
1884	Hardy, George Francis, F.I.A., 32, *Mildmay Chambers, Broad-street, E.C.*
1883	Hardy, William Henry, F.C.A., 5, *Great Winchester-street, E.C.*
1868	Harris, David, *Caroline Park, Granton, Edinburgh.*
1882	Harris, Frederick, 1, *Caroline-terrace, St. Ann's-road, Stamford-hill, N.*

Year of Election.	
1882	Harris, William James, 75, *Linden-gardens, Bayswater, W.*
1884	Hart, James, 19, *Fenchurch-street, E.C.*
1884	Hartel, Adolph, 22, *Arundel-square, Barnsbury-park, N.*
1870	Hartley, Fountain John, *Gloucester House*, 97, *Cazenove-road, Upper Clapton, N.*
1881	Harvey, Alfred Spalding, B.A., 67, *Lombard-street, E.C.*
1884	Harvey, Thomas Morgan, 1, *Gresham Buildings, Basinghall-street, E.C.*
1880	Hastings, George Woodyatt, M.P., *Barnard's-green House, near Malvern.*
1876	Hawkins, Alfred Templeton, F.R.G.S., 22, *Budge-row, Cannon-street, E.C.*
1879	Hawksley, Thomas, C.E., F.R.S., &c., 30, *Great George-street, Westminster, S.W.*
1880	Hazell, Walter, *Ellerslie, Bromley, Kent.*
1885	Hay, John, 26, *Chapel-street, Liverpool.*
1884	Hedley, Robert Wilkin, 31*a*, *Colmore-row, Birmingham.*
1877	Hedley, Thomas Fenwick, 12, *Park-place West, Sunderland.*
1870	Hefford, George V., *Rugby.*
1883	Heilgers, Robert Phillip, 22, *Great St. Helens, E.C.*
1860	Helder, Stewart, F.I.A.,
1865	Hendriks, Augustus, F.I.A., 7, *Cornhill, E.C.*
1855	*Hendriks, Frederick (*Vice-President*), 1, *King William-street, E.C.*
1877	*Herbage, William, *London & South Western Bank*, 7, *Fenchurch-street, E.C.*
1884	Herbert, W. E., 69, *Buchanan-street, Glasgow.*
1881	Hewat, Archibald, F.I.A., F.F.A., 22, *George-street, Edinburgh.*
1834	*Heywood, James, M.A., F.R.S., F.G.S., (*Honorary Vice-President and Trustee*), 26, *Palace-gardens, Kensington, W.; Athenæum Club, S.W.*
1869	Hickson, Joseph, J.P., *Montreal, Canada.*
1878	Hill, Frederick Morley, 22, *Richmond-road, Barnsbury, N.*

Year of Election.

1884 Hoare, Alfred,
37, *Fleet-street, E.C.*

1879 Hoare, H. N. Hamilton,
37, *Fleet-street, E.C.*

1870 *Hoare, Henry,

1884 Hollond, John Robert,
1, *Upper Berkeley-street, Portman-square, W.*

1874 Hooper, Rev. George Downes,
"*Ellerslie,*" *Sunny Gardens, Hendon, N.W.*

1879 Hooper, George Norgate,
Elmleigh, Hayne-road, Beckenham, Kent.

1878 Hooper, Wynnard,
2, *Pembroke-gardens, Kensington, W.*

1883 Howell, Francis Buller,
6, *Upper Wimpole-street, W.*

1883 Howell, George, M.P.,
Hampden House, Ellingham-road, Shepherd's Bush, W.

1885 Howell, Jenkin,
Aberdare, South Wales.

1876 Hoyle, William,
Claremont, Tottington, near Bury, Lancaster.

1853 *Hubbard, The Right Hon. John Gellibrand, M.P.
Bank of England, E.C.

1864 Hudson, Thomas,
4, *St. Ann's-road, Brixton, S.W.*

1878 Hughes, John,
3, *West-street, Finsbury-circus, E.C.*

1883 Hull, Edmund Charles Pendleton,
1, *Fenchurch-avenue, E.C.*

1872 Humphreys, George, M.A., F.I.A.,
79, *Pall Mall, S.W.*

1874 Humphreys, Noel Algernon,
General Register Office, Somerset House, W.C.

1873 Hunt, Sir Henry Arthur, C.B.,
48, *Parliament-street, S.W.*

1883 Hunt, Richard, A., A.I.A.,
Moor-street, Birmingham.

1885 Hunter, William Alfred, LL.D., M.P.,
Fountain-court, Temple, E.C.

1857 Hurst, George,
King's Brook House, St. Mary's, Bedford.

1877 Huskinson, Thomas,
Epperstone Manor, Nottingham.

1879 Hyde, Major-General Henry, R.E.,
India Office, Westminster, S.W.

Year of Election.

1866 Ince, Henry Bret, Q.C., M.P.,
20, *Old-square, Lincoln's-inn, W.C.*

1869 Ingall, Samuel, F.R.G.S.,
Kent-end, Forest-hill, Kent, S.E.

1874 *Ingall, William Thomas Fitzherbert Mackenzie,
6, *Drapers'-gardens, E.C.*

1869 *Inglis, Cornelius, M.D.,
Athenæum Club, S.W.

1839 Irving, John,
94, *Eaton-place, S.W.*

1864 *Ivey, George Pearse,
Homleigh, Micheldever-road, Lee, S.E.

1885 Jackson, Henry,
158, *The Common, Peckham Rye, S.E.*

1880 *Jackson, William Lavies, M.P.,
Chapelallerton, Leeds.

1884 Jacoby, James Alfred, M.P.,
Normanton Hall, Normanton-on-the-Wolds, Notts.

1879 Jamieson, George Auldjo,
37, *Drumsheugh-gardens, Edinburgh.*

1872 Janson, Frederick Halsey, F.L.S.,
41, *Finsbury-circus, E.C., and Oak Bank, Chislehurst.*

1878 Jeans, James Stephen,
Victoria Mansions, Victoria-street, Westminster, S.W.

1883 Jenkins, Benjamin,
3, *Fenchurch-avenue, E.C.*

1881 *Jersey, The Right Hon. the Earl of,
3, *Great Stanhope-street, W.*

1881 Johnson, Edwin Eltham,
110, *Cannon-street, E.C.*

1871 Johnson, Edmund,
1, *Castle-street, Holborn, E.C.*

1880 Johnson, Walter,
Rounton Grange, Northallerton

1872 Johnston, Francis John,
Lamas, Chislehurst.

1881 Johnston, Rev. James,
Gleneve, Highland-road, Upper Norwood, S.E.

1883 Johnston, Thomas,
Broomsleigh Park, Seal, Sevenoaks.

1878 Johnstone, Edward,
14, *Abbeville-road, Cavendish-road, Clapham, S.W.*

Year of Election.

1884 *Jones, Edwin, J. P.,
141, *Cannon-street, E.C.*

1878 Jones, Henry R. Bence,
Board of Trade, Whitehall-gardens, S.W.

1874 Jones, Herbert,
15, *Montpelier-row, Blackheath, S.E.*

1882 Jones, John,
12, *King Edward-road, Hackney, E.*

1880 Jones, Robert Hesketh,
St. Augustine's, Hayne-road, Beckenham, Kent.

1877 Jones, Theodore Brooke,
Georgeville, Harrogate, Yorks.

1883 Joseph, Samuel Solomon,
29, *Hyde Park-gardens, W.*

1884 Josolyne, John Augustus, F.I.C.A., F.S.A., &c.,
28, *King-street, Cheapside, E.C.*

1858 Jourdan, Francis,
Avenue House, Hampstead, N.W.

1873 Kay, Duncan James,
60, *Queen's-gate, S.W.*

1877 Kealy, James William,
26, *Moorgate-street, E.C.*

1885 Keen, William Brock,
15, *King-street, Cheapside, E.C.*

1874 Kelly, Charles, M.D., F.R.C.P.,
Worthing, Sussex.

1884 Kelly, Edward Festus,
51, *Great Queen-street, Lincoln's-inn-Fields, W.C.*

1867 Kelly, Edward Robert, A.M.,
51, *Great Queen-street, Lincoln's-inn-fields, W.C.*

1883 Keltie, John Scott,
30, *Bedford-street, Covent Garden, W.C.*

1884 Kemp, John,
46, *Cannon-street, E.C.*

1884 *Kennedy, Charles Malcolm, C.B.,
Foreign Office, S.W.

1878 Kennedy, J. Murray,
New University Club, St. James's-street, S.W.

1878 Kennedy, Thomas,
11, *Old Jewry-chambers, E.C.*

1883 *Keynes, John Neville, M.A., B.Sc.
6, *Harvey-road, Cambridge.*

Year of Election.

1884 Kimber, Henry, M.P.,
79, *Lombard-street, E.C.*

1852 Kimberley, The Right Honourable the Earl of, M.A., P.C.,
35, *Lowndes-square, S.W.*

1883 *King, Bolton, B.A.,
10, *Upper Berkeley-street, W.*

1878 King-Harman, Colonel the Right Hon. Edward Robert, M.P.,
Rockingham, Boyle, Ireland.

1884 Kirby, Horace Woodburn, F.C.A.,
19, *Birchin-lane, E.C.*

1879 Kirkwood, Anderson, LL.D.,
Melville-terrace, Stirling, N.B.

1872 Knight, John Peake,
London, Brighton, & S. Coast Rail., London Bridge, E.C.

1878 *Kusaka, Yoshio,
First National Bank, Tokio, Japan.

1869 Kyshe, John Benjamin,
76, *Princes-square, Bayswater, W.*

1884 Laishley, Richard, jun., F.R.G.S., F.R.S.L., &c.,
Auckland, New Zealand.

1874 Lang, George Murray, R.N.,
18, *Cheyne-walk, Chelsea, S.W.*

1881 Langton, Henry Currer,
Docklands, Ingatestone, Essex.

1883 Last, William Harrison,
Inland Revenue, Somerset House, W.C.

1885 Latham, Baldwin, M.Inst.C.E.,
7, *Westminster-chambers, S.W.*

1877 Laurance, Henry,
39, *Old Bond-street, W.*

1885 Law, James
46, *Dame-street, Dublin.*

1874 Lawes, Sir John Bennett, Bart., LL.D., F.R.S., F.C.S.,
Rothamsted-park, St. Albans.

1878 Lawrence, Alexander Macclesfield,
99, *South Hill Park, Hampstead, N.W.*

1873 Lawrie, James, F.R.G.S.,
Kelvin House, Quadrant-road, Highbury, N.

1883 Lawson, Charles Henry,
Green's End, Woolwich.

1873 Lawson, Robert, LL.D., (*Inspector-General of Army Hospitals*), 20, *Lansdowne-road, Notting-hill, W.*

Year of Election.

1873 Lea, Thomas,
14, *Elvaston-place, Queen's-gate, S.W.*

1883 *Leadam, Isaac Saunders, M.A.,
117, *St. George's-square, S.W.*

1883 Lee, Henry,
Reform Club, S.W.

1880 Lee, Lionel Frederic, (*Ceylon Civil Service*),
c/o H. Austin Lee, Foreign Office, Downing-street, S.W.

1884 Lee, William,
Fairlands, Worplesdon, Guildford, Surrey.

1879 *Leete, Joseph,
36, *St. Mary-at-hill, E.C., & Eversden, S. Norwood Park.*

1883 Lefeaux, Alfred J.,
12, *Clarendon Villas, Charlton, Kent.*

1877 Lefevre, The Right Hon. George Shaw, M.A., J.P.,
(*Honorary Vice-President*), 18, *Bryanston-square, W.*

1877 *Leggatt, Daniel, LL.D.,
5, *Raymond-buildings, Gray's-inn, W.C.*

1880 Leighton, Stanley, M.P.,
Sweeney Hall, Oswestry, Salop.

1885 Lever, Ellis,
Culcheth Hall, Bowdon, Cheshire.

1851 Levi, Professor Leone, LL.D., F.S.A. (*Vice-President*),
5, *Crown Office-row, Temple, and* 31, *Highbury-grove, N.*

1862 Lewis, Robert,
1, *Bartholomew-lane, E.C.*

1877 Ligertwood, Thomas, M.D., F.R.C.S.,
Royal Hospital, Chelsea, S.W.

1884 *Lines, William Edward,
14, *Hugh-street, Eccleston-square, S.W.*

1845 *Lister, William,

1878 Lloyd, Thomas,
13, *Angel-court, Throqmorton-street, E.C.*

1879 Lloyd, Wilson, M.P., F.R.G.S.,
Myvod House, Wood-green, Wednesbury.

1882 *Longstaff, George Blundell, M.A., M.B.,
Southfield Grange, West Hill-road, Wandsworth, S.W.

1876 *Lornie, John Guthrie, J.P.,
Rosemount, Kirkcaldy; (of Birnam and Pitcastle) N.B.

1834 Lovelace, The Right Honourable the Earl of, F.R.S.,
East Horsley Park, Ripley, Surrey.

1880 Lovely, William, R.N.,
41, *Bernard-street, Russell-square, W.*

1879 Lowndes, William Layton, J.P., D.L.,
27, *Marine-parade, Dover.*

1865 Lubbock, Sir John, Bart., M.P., F.R.S., (*Trustee*),
High Elms, Farnborough, Kent.

1882 Lubbock, Nevile,
Leesons, Chislehurst, Kent.

Year of Election.

1878 Lucas, Thomas, J.P.,
37, *Great George-street, Westminster, S.W.*

1885 Luckie, David Mitchell,
Wellington, New Zealand.

1878 Lusk, Sir Andrew, Bart., J.P.,
15, *Sussex-square, Hyde Park, W.*

1885 Mabbs, The Rev. Goodeve,
73, *Godolphin-road, Shepherd's Bush, W.*

1875 Mabson, Richard Rous,
Ilford, Essex.

1873 *Macandrew, William, J.P.,
Westwood, near Colchester.

1873 McArthur, Alexander, M.P.,
Raleigh Hall, Brixton, S.W.

1873 McArthur, Alderman Sir William, K.C.M.G.,
79, *Holland-park, W.*

1883 McCabe, Hugh B.,
45, *Friday-street, E.C.*

1884 McCabe, William, LL.B, F.I.A.,
Drawer 2951, *Toronto, Canada.*

1879 MacCarthy, Rev. Egerton Francis Mead, M.A.,
93, *Hagley-road, Edgbaston, Birmingham.*

1867 M'Clean, Frank,
23, *Great George-street, Westminster, S.W.*

1873 McDermott, Edward,
Hill Side, Grove-park, Camberwell, S.E.

1881 Macdonald, Charles McCay,
17, *Queen Victoria-street, E.C.*

1872 Macdonell, John,
4, *Elm-court, Temple, E.C.*

1873 *McEwen, Laurence T.,
c/o R. A. McLean, 1, *Queen Victoria-street, E.C.*

1873 McGarel-Hogg, Colonel Sir James, Bart., M.P.,
17, *Grosvenor-gardens, S.W.*

1882 McGuire, Patrick,
57, *Amherst-street, Calcutta.*

1878 McKewan, William,
21, *Lombard-street, E.C.*

1881 Mackey, Rev. Canon Donald John, M.A., Cantab,
The Chantry, Balhousie, Perth, N.B.

1876 *McLean, Robert Allan, F.R.G.S.,
1, *Queen Victoria-street. E.C.*

Year of Election.	
1863	*Maclure, John William, J.P., &c., *Carlton Club; The Home, Whalley Range, Manchester.*
1875	Macpherson, Hugh Martin, F.R.C.S., (*Inspector-General*), 14, *St. James's-square, S.W.*
1883	Macqueen, Robert Davidson Barkly, 20, *Addison-gardens North, W.*
1882	McRosty, Alexander, 13, *King's Arms-yard, E.C.; West Bank, Esher.*
1884	Man, Edward Garnet, *Lamb Building, Temple, E.C.*
1883	*Mandlik, The Hon. Rao Saheb Vishvanath Narayan, C.S.I., *The Hermitage, Bombay.*
1884	*Manson, Frederick William, *Wellfield, Muswell Hill, N.*
1877	*Maple, John Blundell, 8, *Clarence-terrace, Regent's-park, N.W.*
1875	Marsh, Alfred, 85, *Gracechurch-street, E.C.*
1880	*Marshall, Professor Alfred, 17, *Chesterton-road, Cambridge.*
1873	Martin, Henry, *National Bank of India*, 39*a*, *Threadneedle-street, E.C.*
1874	*Martin, John Biddulph, M.A., F.Z.S., (*Foreign Secretary*), 17, *Hyde-park-gate, S.W.*
1877	Martin, Josiah, F.I.A., 32, *New Bridge-street, E.C.*
1872	*Martin, Richard Biddulph, M.A., (*Treasurer*), 68, *Lombard-street, E.C., and Chislehurst.*
1876	*Martin, Thomas Jaques, 84, *Collins-street West, Melbourne, Victoria.*
1879	Martin, Waldyve A. Hamilton, *The Upper Hall, Ledbury, Herefordshire.*
1884	Mason, William Arthur, 31*a*, *Colmore-row, Birmingham.*
1875	*Mathers, John Shackleton, *Hanover House, Leeds, Yorkshire.*
1883	Mathieson, Frederic Coxhead, *Beechworth, Hampstead, N.W.*
1870	Maxse, Vice-Admiral Frederick A., *Brook's Club, St. James's-street, S.W.*
1874	May, Frank, *Bank of England, Threadneedle-street, E.C.*
1882	Medhurst, John Thomas, 126, *Narrow-street, Limehouse, E.*
1883	*Medley, George Webb, 21, *Park-street, Park-lane, W.*
1853	*Meikle, James, F.I.A., 6, *St. Andrew's-square, Edinburgh.*
1880	Menzies, R. Stewart, M.P., *Hallyburton, Coupar-Angus, N.B.*

Year of Election.	
1884	Merton, Zachary, 14*a*, *Manchester-square, W.*
1881	Meyer, Robert Alexander, 40A, *Queen's Mansions, Victoria-st., Westminster, S.W.*
1875	Mildmay, Henry Bingham, J P., 8, *Bishopsgate-street Within, E.C.*
1873	Millar, William Henry, *Cleveland Lodge, New Park-road, Brixton-hill, S.W*
1877	Miller, Robert Ferguson, *Ramsden-square, Barrow-in-Furness.*
1879	Miller, William, 67, *Queen Victoria-street, E.C.*
1878	Mills, Sir Charles Henry, Bart., *Camelford House, Park-lane, W.*
1882	Milnes, Alfred, M.A., 30, *Almeric-road, Wandsworth, S.W.*
1884	Milnes, Charles S., 155, *Fenchurch-street, E.C.*
1874	*Mocatta, Frederick D., F.R.G.S., 9, *Connaught-place, W.*
1878	Moffat, Robert J., *Meadowcroft, Cambridge.*
1883	Moffatt, George, 29, *Eastbourne-terrace, W.*
1884	Mongredien, Augustus, 15, *Park-road-villas, Forest-hill, S.E.*
1879	Moore, Alfred, C.E., *Queen's Chambers*, 2, *Ridgfield, Manchester.*
1874	Moore, Charles Rendall, 46, *Brockley-road, Lewisham-road, S.E.*
1877	Moore, Edward, 3, *Crosby-square, E.C.*
1885	Moore, Harold E., 5, *Chancery-lane, W.C.*
1878	*Moore, John Byers Gunning, *Loymount, Cookstown, Ireland.*
1830	More, Robert Jasper, M.P., *Linley Hall, Bishopscastle, Salop.*
1883	Morgan, Henry James, *Ottawa, Canada.*
1883	Morgan, James Henry, 126, *Narrow-street, Limehouse, E.*
1872	Morgan, Octavius Vaughan, M.P., J.P. 13, *Boltons, South Kensington, S.W.*
1881	Morison, Arthur Duff, 23, *Regency-street, Westminster, S.W.*
1873	*Morley, Samuel, 18, *Wood-street, E.C.;* 34, *Grosvenor-street, W.*
1874	*Morris, James, M.D., F.R.C.S., 13, *Somers-place, Hyde-park-square, W.*

Year of Election.

1884 Morris, W. Targett,
Langford House, Buckhurst-hill, Essex.

1877 Mort, William,
1, *Stanley-crescent, Notting-hill, W.*

1873 Morton, James,
1, *Palmerston-buildings, Greenock, N.B.*

1885 *Mosley Tonman,
Bangors, Iver, Uxbridge.

1847 *Mouat, Frederic John, M.D., F.R.C.S.,
12, *Durham-villas, Kensington, W.*

1857 *Mount-Temple, The Right Hon. Lord,
15, *Great Stanhope-street, W.*

1878 Muir, Hugh Brown,
26, *Old Broad-street, E.C.*

1885 Muir, Robert,
162, *Buchanan-street, Glasgow.*

1883 Muirhead, Henry James,
Oakwood, Farquhar-road, Upper Norwood, S.E.

1880 Mulhall, Michael George,
19, *Albion-street, Hyde Park, W.*

1878 *Mundella, The Right Hon. Anthony John, M.P., F.R.S.,
16, *Elvaston-place, Queens-gate, S.W.*

1878 Murray, Adam,
104, *King-street, Manchester.*

1879 Murray, James Charles,
Calcutta.

1883 Murray, Kenric Bright,
84, *King William-street, E.C.*

1865 Nasmith, David,
4, *Garden-court, Temple, E.C.*

1878 *Nathan, Henry,
Dashwood House, New Broad-street, E.C.

1879 Neil, William M.,

1854 Neild, Alfred,
Mayfield Print Works, Manchester.

1869 Neison, Francis Gustavus Paulus, F.I.A.,
93, *Adelaide-road, South Hampstead, N.W.*

1885 Nelson, E. Montague,
Hanger Hill House, Ealing, W.

1879 Nepean, Evan Colville,

1877 Nevill, Charles Henry,
11, *Queen Victoria-street, E.C.*

Year of Election.	
1862	Newbatt, Benjamin, F.I.A., F.R.G.S., 13, *St. James's-square, S.W.*
1881	Newcome, Frederick N., *Haverstock Lodge, Watford, Herts.*
1879	Newdegate, Charles Newdigate, D.C.L., 27, *Lowndes-street, Belgrave-square, S.W.*
1883	Newmarch, Mrs. Elizabeth, *Brook House, Addlestone, Surrey.*
1878	Newport, Henry R.,
1878	Newton, John, *Ash Lea, Croydon-road, Penge, S.E.*
1878	Nicholson, Professor J. S. *University of Edinburgh.*
1858	Nightingale, Miss Florence, 10, *South-street, Park-lane, W.*
1877	Nix, Samuel Dyer, F.C.A., 3, *King-street, Cheapside, E.C.*
1871	*Noble, Benjamin, *North-Eastern Bank, Newcastle-on-Tyne.*
1870	Noble, John, 62, *Lady Somerset-road, Highgate-road, N.W.*
1883	Norfolk, J. Ernest Walter, 95, *Farringdon-street, E.C.*
1884	Norman, Charles Loyd, *Oakley, Bromley, Kent.*
1877	Norman, General, Sir Henry Wylie, K.C.B., *King's House, Jamaica.*
1878	Northbrook, The Right Hon. the Earl of, G.C.S.I., D.C.L., 4, *Hamilton-place, Piccadilly, W.*
1878	Notthafft, Theodor, *c/o Discount Bank, St. Petersburg.*
1880	Oakeshott, George Alfred, *Secretary's Office, General Post Office, E.C.*
1884	Odgers, William Blake, LL.D., 4, *Elm-court, Temple, E.C.*
1880	*Oelsner, Isidor, *Highfield, Westwood-park, Forest-hill, S.E.*
1862	Ogbourne, Charles Henry, *Fairlawn, Bath-road, Reading.*
1885	Ogle, William, M.A., M.D., F.R.C.P., &c., *General Register Office, Somerset House, W.C.*

Year of Election.	
1884	Ogston, George Henry, 28, *Charles-street, St. James's, S.W.*
1885	Oldham, John, *River Plate Telegraph Company, Montevideo.*
1884	Oldroyd, Mark, *Hyrstlands, Dewsbury, Yorkshire.*
1878	Oppenheim, Henry, 16, *Bruton-street, Bond-street, W.*
1876	Orange, William, M.D., *Broadmoor, Wokingham, Berks.*
1877	Ormond, Richard, 24, *Grainger-street West, Newcastle-on-Tyne.*
1874	Overall, William Henry, F.S.A., *Librarian, Guildhall, E.C.* (*Representing the Library Committee of the Corporation of the City of London.*)
1866	*Palgrave, Robert Harry Inglis, J.P., F.R.S., *Belton, Great Yarmouth, Norfolk.*
1883	Palmer, Charles,
1879	Palmer, George, 58, *Grosvenor-street, W.; and The Acacias, Reading.*
1884	Palmer, J. T., 8, *Wine Office-court, Fleet-street, E.C.*
1878	Park, David Francis, C.A., F.F.A., A.I.A., 17, *Change-alley, Cornhill, E.C.*
1880	Parkin, William, *The Mount, Sheffield.*
1881	Parr, Samuel, 7, *Finsbury-square, E.C.*
1878	Parry, Thomas, *Grafton-place, Ashton-under-Lyne.*
1879	Partridge, Henry Francis, L.D.S., &c., *Sussex House, Sussex-place, South Kensington, S.W.*
1883	Paterson, John, 35, *Walbrook, E.C.*
1869	Patterson, Robert Hogarth, 22, *Wingate-road, Hammersmith, W.*
1877	Paul, Henry Moncreiff, 12, *Lansdowne-crescent, Notting Hill, W.*
1878	Paulin, David, 44, *Moray-place, Edinburgh.*
1879	Payn, Howard, 30, *Hyde-park-place, W.*

Year of Election	
1884	Payne, Frederick, *Newfarm, South-hill-park, Bromley, Kent.*
1884	*Peace, Walter, 21, *Finsbury-circus, E.C.*
1876	Pearson, Edwin James, *Athenæum Club, S.W.*
1857	*Pearson, Professor C. H., *c/o Sir John Pearson*, Q.C., 75, *Onslow-square, S.W.*
1880	*Pease, Sir Joseph Whitwell, Bart., M.P., 24, *Kensington-palace-gardens, W.*
1884	Peek, Francis, 4, *Fenchurch-street, E.C.*
1876	*Peek, Sir Henry William, Bart., *Wimbledon House, S.W.*
1878	Pellereau, Hon. Etienne, *Procureur and Advocate-General, Port Louis, Mauritius.*
1880	Pender, John, 18, *Arlington-street, S.W., and* 66, *Old Broad-street, E.C.*
1871	Pennington, Frederick, 17, *Hyde Park-terrace, W.*
1874	Pepys, The Hon. George, *United University Club, Suffolk-street, S.W.*
1881	Perring, R. B., *Queen's Chambers, John Dalton-street, Manchester.*
1883	Petheram, Frederick William, F.C.A., 2, *Lombard-court, E.C.*
1874	Phené, John Samuel, LL.D., F.S.A., 5, *Carlton-terrace, Oakley-street, S.W.*
1879	Philips, Herbert, 35, *Church-street, Manchester.*
1877	Phillipps, Henry Matthews, 41, *Seething-lane, E.C.*
1859	Phillips, Henry James, 4, *Ludgate-hill, E.C.*
1883	Phillips, John Orwell, *Horseferry-road, Westminster, S.W.*
1877	Phillips, John Walter, M.B., L.R.C.S. Edin., 30, *Stanley-street, West Melbourne, Victoria, Australia.*
1878	Phipps, Pickering, 6, *Collingtree Grange, Northampton.*
1871	*Pickering, John, F.R.G.S., F.S.A., 86, *Thicket-road, Anerley, S.E.*
1885	Pierrard, Paul, 12, *Moorgate-street, E.C.*
1878	*Pim, Joseph Todhunter, *Greenbank, Monkstown, County Dublin.*
1838	*Pinckard, George Henry, J.P., F.I.A., 12, *Grove-road, St. John's-wood, N.W.*
1885	Pitman, Walter Hayward, 30, *Newgate-street, E.C.*

Year of Election.	
1879	Pixley, Francis William, 23, *Linden-gardens, W.*
1881	Planck, Charles, M.R.C.S. (*Deputy Surgeon-General*), *Allahabad, India.*
1883	Platt, James, *Rookwood, Hampstead, N.W.*
1861	Plowden, Wm. Chicele (*Census Commissioner for India*), 101, *Eaton-square, S.W.; Wyke Hall, Gillingham, Dorset.*
1869	Pochin, Henry Davis, J.P., *Bodnant Hall, Eglwysbach, R.S.O. Denbighshire.*
1884	Polson, John, *Paisley, N.B.*
1883	Pope, William Agnew, *Merrington House, Bolton Gardens, South Kensington, W.*
1885	Popplewell, William Willott, *Victoria Chambers, Southampton-buildings, W.C.*
1879	*Powell, Francis Sharp, M.P. (*Horton Old Hall, Bradford*), 1, *Cambridge-square, Hyde Park, W.*
1871	Power, Edward, 16, *Southwell-gardens, South Kensington, S.W.*
1884	Power, John Danvers, 9, *New-inn, Strand, W.C.*
1883	Poynting, Professor J. H., M.A., *Brentwood, Hagley-road, Edgbaston, Birmingham.*
1877	*Prance, Reginald Heber, *Frognal, Hampstead, N.W.*
1877	Praschkauer, Maximilian, 10, *Priory-grove, Boltons, S.W.*
1867	*Pratt, Robert Lindsay, 80, *Bondgate, Darlington*
1879	Price, James, F.R.G.S.,
1877	Price-Williams, Richard, C.E., 38, *Parliament-street, S.W.*
1884	*Proctor, William, 89, *Corporation-street, Manchester.*
1871	Puleston, John Henry, M.P., 2, *Bank-buildings, Princes-street, E.C.*
1837	*Purdy, Frederick, 35, *Victoria-road, Kensington, W.*
1885	Purvis, Gilbert, 77, *Queen's-road, Brownswood Park, N.*

Year of Election.

1879 Quail, Jesse,
14, *Palmerston-street, Stockton-on-Tees.*

1874 Quain, Richard, M.D., F.R.S., F.R.C.P.,
67, *Harley-street, W.*

1883 Quoadt, Ferdinand,
Corn Exchange Chambers, Seething-lane, E.C.

1883 Rabbidge, Richard, F.C.A.,
32, *Poultry, E.C.*

1872 *Rabino, Joseph, (*c/o Crédit Lyonnais*),
Alexandria, Egypt.

1858 *Radstock, The Right Honourable Lord,
East Sheen, Mortlake, S.W.

1885 Rae, John,
56, *Ludgate-hill, E.C.*

1877 Raikes, Major George Alfred, F.S.A., F.R. His. Soc.,
63, *Belsize-park, Hampstead, N.W.*

1864 *Raleigh, Samuel,
9, *St. Andrew-square, Edinburgh.*

1860 Ramsay, Alexander Gillespie, F.I.A.,
Canada Life Assurance Co., Hamilton, Canada West.

1885 Randell, James S.,
Corsham, Wilts.

1879 Ranken, William Bayne,

1880 Rankin, James,
35, *Ennismore-gardens, Prince's Gate, S.W.*

1881 Raper, Robert George,
Chichester.

1884 Raphael, Alfred,
87, *Alexandra-road, N.W.*

1859 Rathbone, P. H.,
Greenbank Cottage, Liverpool.

1878 Rathbone, William, M.P.,
18, *Prince's-gardens, Prince's-gate, S.W.*

1884 *Ravenscroft, Francis,
Birkbeck Bank, Chancery-lane, W.C.

1874 *Ravenstein, Ernest George, F.R.G.S.,
29, *Lambert-road, Brixton Rise, S.W.*

1877 *Rawlins, Thomas,
45, *King William-street, E.C.*

1835 Rawson, Sir Rawson W., K.C.M.G., C.B. (*President*),
68, *Cornwall-gardens, Queen's-gate, S.W.*

Year of Election.	
1880	Readdy, George, 13, *Harrington-street, Liverpool.*
1875	Record, John, 23, *Kenninghall-road, Clapton, E.*
1879	Rhodes, John George, *Oakdene, Beckenham, Kent.*
1884	Richards, E. W., C.E. *Middlesboro-on-Tees.*
1884	Richardson, T. H., *Brynteg, Middlesbrough.*
1873	Ripon, The Most Hon. the Marquess of, K.G., F.R.S, &c., 1, *Carlton-gardens, S.W.*
1882	Roberts, Edward, F.R.A.S., (*Nautical Almanac Office*), 3, *Verulam-buildings, Gray's Inn, W.C.*
1885	Robertson, Thomas Stewart, *Collins-street West, Melbourne, Victoria.*
1868	Robinson, Sir William Rose, K.C.S.I.,
1885	Rodger, Adam Kier, 81, *Renfield-street, Glasgow.*
1880	*Ronald, Byron L., 14, *Upper Phillimore-gardens, W.*
1885	Roper, Alderman William, *Southfield, Lancaster.*
1883	Roscoe, Henry William Kent, 2, *Sheffield-terrace, Kensington, W.*
1873	*Rosebery, The Right Hon. the Earl of, *Lansdowne House, Berkeley-square, W.*
1883	Ross, John Grafton,
1880	Roth, Henry Ling, 48, *Wimpole-street, W.*
1865	Ruck, George Thomas, *The Hawthorns, Dorville-road, Lee, S.E.*
1879	Runtz, John, *Linton Lodge, Lordship-road, Stoke Newington, N.*
1878	Russell, Richard F., 8, *John-street, Adelphi, W.C.*
1873	Rutherford-Elliot, J. G., 5, *March Hall-road, Newington, Edinburgh.*
1884	Ryan, Gerald H., F.I.A. 14, *Leadenhall-street, E.C.*

Year of Election.	
1873	*Salisbury, The Most Hon. the Marquess of, P.C., F.R.S., 20, *Arlington-street, W.*
1881	Salmon, James, *Melford Lodge, Wanstead, Essex.*
1875	*Salomons, Sir David Lionel, Bart., J.P., *Broom-hill, Tunbridge Wells.*
1876	Salt, Thomas, *Weeping Cross, Stafford.*
1868	Samuelson, Sir Bernhard, Bart., M.P., F.R.S., 56, *Prince's-gate, Hyde-park, S.W.*
1860	Sargant, William Lucus, *Rotton-park-road, Birmingham.*
1877	Saunders, Charles Edward, M.D., 21, *Lower Seymour-street, Portman-square, W.*
1874	Saunders, Francis, 6, *Limes-grove, Lewisham, S.E.*
1852	Saunders, James Ebenezer, jun., F.G.S. 9, *Finsbury-circus, E.C.*
1879	Saunders, William, *Mount View, Streatham, S.W.*
1883	Schidrowitz, Samuel, 102, *Oxford-gardens, Notting Hill, W.*
1877	Schiff, Charles, 22, *Lowndes-square, S.W.*
1877	Schneidau, Charles John, 6, *Westwick-gardens, West Kensington-park, W.*
1883	Schwann, John Frederick, *Oakfield, Wimbledon, and* 6, *Moorgate-street, E.C.*
1883	Sclanders, Alexander, 10, *Austin Friars, E.C.*
1878	Scott, Arthur J., *Rotherfield Park, Alton.*
1885	Scott, James Henry, 12, *Waterloo-place, S.W.*
1885	Scott, John D., M.A., *St. John's College, Cambridge.*
1880	*Seeley, Charles, jun., M.P., *Sherwood Lodge, Nottingham.*
1883	Seligman, Isaac, *Lincoln House, Clapham Park, S.W.*
1873	Seyd, Richard, 38, *Lombard-street, E.C.*
1879	Shepheard, Wallwyn Poyer Burnett, M.A., 24, *Old Buildings, Lincoln's Inn, W.C.*
1885	Sherwin, Joseph Henry, 16, *Whitehall-place, S.W.*
1871	Sidgwick, Prof. Henry, M.A. *Trinity College, Cambridge.*
1878	Simmonds, G. H., 1, *Whitehall, S.W.*

Year of Election.	
1885	Simner, William Lewis, *Local Government Board, Whitehall, S.W.*
1850	Singer, Charles Douglas, 53, *The Common, Upper Clapton, E.*
1882	Skinner, C. Weeding, *Hill Crest, Theydon Bois, Essex.*
1884	Skliros, George Eustace, M.A., F.R.G.S., &c., 82, *Mortimer-street, Cavendish-square, W.*
1881	Skrine, Francis Henry, *United Service Club, Calcutta, India.*
1883	Sly, Richard Stevens, *Fern Villa, Queen's-road, New Cross Gate, S.E.*
1869	Smee, Alfred Hutcheson, M.R.C.S., *The Grange, Wallington, Surrey.*
1878	*Smith, Charles, M.R.I.A., F.G.S., Assoc. Inst. C.E., *Barrow-in-Furness.*
1883	*Smith, The Hon. Donald A., 1157, *Dorchester-street, Montreal, Canada.*
1871	Smith, E. Cozens, 1, *Old Broad-street, E.C.*
1883	Smith, E. Woodley, A.C.A., 28, *Budge-row, Cannon-street, E.C.*
1878	*Smith, George, LL.D., C.I.E., *Serampore House, Napier-road, Edinburgh.*
1877	Smith, Howard S., 37, *Bennett's Hill, Birmingham.*
1878	*Smith, James, *South Indian Railway, Negapatam, Madras.*
1877	Smith, John, 8, *Old Jewry, E.C.*
1879	Smith, J. Fisher, 76, *Cheapside, E.C.*
1883	Smith, Samuel, *West Hill Side, Clapham Common, S.W.*
1880	Smith, Thomas Sherwood, *Firgrove, Keynsham, near Bristol.*
1867	*Smith, The Right Honourable William Henry, M.P., 3, *Grosvenor-place, S.W.*
1884	Solomon, The Hon. Michael, (*Jamaica*), *c/o Joseph Bravo and Co.*, 48, *St. Mary Axe, E.C.*
1855	Sowray, John Russell, *Office of Woods*, 2, *Whitehall-place, S.W.*
1877	Spalding, Samuel, *South Darenth, Kent.*
1884	Spark, C. W., *The Chantry, Alford, Lincolnshire.*
1867	*Spencer, Robert James, *High-street, Portsmouth.*
1876	Spensley, The Hon. Howard, M.P., F.R.G.S., 12, *Earl's Court-square, South Kensington, S.W.*

Year of Election.

1881 Spice, Robert Paulson, C.E.,
21, *Parliament-street, Westminster, S.W.*

1883 Spicer, Albert,
Woodford, Essex, and 50, *Upper Thames-street, E.C.*

1856 *Sprague, Thomas Bond, M.A., F.I.A.,
26, *St. Andrew-square, Edinburgh.*

1872 Spriggs, Joseph,
Dale Cottage, Foxton, near Market Harbro'.

1882 Stack, Thos. Neville,
3, *Church-lane, College-green, Dublin.*

1856 *Stainton, Henry Tibbats,
Mountsfield, Lewisham, S.E.

1885 Standfield, John,
44, *Lillieshall-road, Clapham, S.W.*

1877 Stanford, Edward,
13 *and* 14, *Long Acre, W.C.*

1877 Staples, Sir Nathaniel Alexander, Bart.,
Lissan, Cookstown, Tyrone, Ireland.

1880 Stark, James,
17, *King's Arms-yard. E.C.*

1880 Stephens, William Davies, J.P.,
4, *Abbotsford-terrace, Newcastle-on-Tyne.*

1882 *Stern, Edward De,
11, *Princes-gate, S.W.*

1885 Stevens, Marshall,
Garston, Lancashire.

1883 Stone, Frank,

1877 Stone, William Alfred,
90, *Cannon-street, E.C.; Hayton, Bramley Hill, Croydon.*

1855 *Stott, John, F.I.A.,
7, *Buckland-crescent, Belsize-park, N.W.*

1865 Strachan, Thomas Young, F.I.A.,
18, *Grainger-street West, Newcastle-on-Tyne.*

1872 Strachey, General Richard, R.E., C.S.I., F.R.S.,
India Office, Westminster, S.W.

1880 Strutt, Hon. Frederick,
Milford House, near Derby.

1884 *Sugden, Richard,
The Farre Close, Brighouse, Yorkshire.

1880 *Summers, William (*Sunnyside, Ashton-under-Lyne*),
Reform Club, Pall Mall, S.W.

1884 Sutherland, Thomas, M.P.,
167, *Cromwell-road, South Kensington, S.W.*

1884 Sweeting, Richard Deane Roker, M.R.C.S., B.A., &c.,
Western District Hospital, Seagrave-road, Fulham, S.W.

1881 Sykes, George Samuel,
1, *Grant's Lane, Calcutta, India.*

Year of Election.	
1859	*Tait, Patrick Macnaghten, F.R.G.S., *Hardwick House, Eastbourne, and Oriental Club, W.*
1885	Tanner, Russell R., B.A., *Seathwaite Cottage, Frome.*
1884	Tarbet, Thomas William, 33, *Warwick-street, Regent-street, W.*
1880	Taylor, George, 17, *Abchurch-lane, E.C.*
1883	Taylor, Harry, 40, *Albert Hall-mansions, Kensington, S.W.*
1884	Tempany, Thomas William, F.R.H.S., 25, *Bedford-row, W.C.*
1882	Temperley, Joseph, 1, *Cail's-buildings, Newcastle-on-Tyne.*
1880	Temple, Sir Richard, Bart., G.C.S.I., M.P., D.C.L., &c., (*Vice-President*) *Carlton Club, Pall Mall, S.W.*
1885	Theobald, Henry, 1, *Deanery-terrace, The Green, Stratford, Essex.*
1879	Thomas, William Angell, *King's College, Strand, W.C.*
1879	Thomas, W. Cave, 8, *Fitzroy-street, Fitzroy-square, W.*
1878	Thompson, Alfred Boyle, F.R.C.P. Edin., 18, *Serjeants'-inn, Temple, E.C.*
1878	Thompson, Captain C. Halford (late R.A.), *Claremont, Exeter.*
1864	*Thompson, Henry Yates, 26*a*, *Bryanston-square, W.*
1868	Thomson, James, 35, *Nicholas-lane, E.C.*
1871	Thomson, Thomas D., 57, *Moorgate-street, E.C.*
1883	Thorburn, Alexander Brown, 17, *Marloes-road, Kensington, W.*
1882	Tinker, James, 80, *Cromwell-road, S.W.*
1885	Tipping, Walter Abbott, *St. Andrew-street, Dublin.*
1879	Tipping, William, *Oakfield House, Ashton-under-Lyne.*
1855	Tomline, Colonel George, 1, *Carlton House-terrace, S.W.*
1868	*Treatt, Frank Burford, *Immigration Office, Sydney, New South Wales.*
1868	Tritton, Joseph Herbert, 54, *Lombard-street, E.C.*
1883	Tronson, Norman Percy Mills,

Year of Election.

1880 Tupp, Alfred Cotterill (*Bengal Civil Service*),
6, *Harrington-street, Calcutta.*

1878 Turnbull, Alexander,
118, *Belsize-park-gardens, N.W.*

1884 Turner, Francis,
5, *Pump-court, Temple, E.C.*

1867 Turner, Thomas,
Holywell House, Weston-super-Mare.

1885 Turner, William,
Board of Trade, Cardiff.

1841 Tyndall, William Henry,
Morlands, Oxford-road, Redhill.

1873 Underdown, Robert George,
London-road Railway Station, Manchester.

1876 *Urlin, Richard Denny,
22, *Stafford-terrace, Phillimore-gardens, W.*

1842 Valpy, Richard,
43, *Prince's-gate, S.W.*

1868 Vanderbyl, Philip, M.D., M.P.,
51, *Porchester-terrace, W., & Northwood, Winchester.*

1880 Van de Linde, Gérard, F.C.A.,
12, *Laurence Pountney-lane, Cannon-street, E.C.*

1883 Van Essen, Jacob,
56, *Threadneedle-street, E.C.*

1884 Veevers, Richard,
Woningworth, Fulwood-park, Preston.

1874 Vian, William John,
64, *Cornhill, E.C.*

1876 Vigers, Robert,
4, *Frederick's-place, Old Jewry, E.C.*

1885 Vincent, Frederick James, A.I.A.,
23, *Harvest-road, Holloway, N.*

1877 Vine, John Richard Somers,
27, *Great Winchester-street, E.C.*

Year of Election.	
1877	Waddy, Henry Edward, L.R.C.P., M.R.C.S., 2, *Clarence-street, Gloucester.*
1883	Wahab, Edward, 14, *St. Mary Axe, E.C.*
1873	Wakeford, Henry, *Home Office, Whitehall, S.W.*
1883	Walford, John Edward, C.C., *Knightrider-street, E.C.*
1882	Wallen, Robert, J.P., *Harlech, Hawthorn, near Melbourne, Victoria.*
1868	Wallis, Charles James, 93, *Brecknock-road, Camden-road, N.*
1880	Wallis, E. White, F.M.S., 83, *Iverson-road, Brondesbury, N.*
1876	Walter, Arthur Fraser, 15, *Queen's Gate-terrace, S.W.*
1850	Walter, John, 40, *Upper Grosvenor-street, W.*
1879	Wansey, Arthur H., *Sambourne, Stoke Bishop, Bristol.*
1873	Waring, Charles, 2, *Grosvenor-square, S.W.*
1885	*Watt, William, 27, *North Albert-street, Aberdeen.*
1865	Waterhouse, Edwin, B.A., 44, *Gresham-street, E.C.*
1873	Watson, John Forbes, M.A., M.D., LL.D. 16, *Lullington-road, Anerley, S.E.*
1883	Watson, T. Wilkinson, 151, *West George-street, Glasgow.*
1882	Watson, Walter, 52, *Balmes-road, Southgate-road, N.*
1883	Watson, William Livingstone, 7, *Wetherby-gardens, South Kensington, S.W.*
1865	Webster, Alphonsus,
1873	Webster, James Hume, 14, *Chapel-street, Park-lane, W.*
1873	*Welby, Sir Reginald Earle, K.C.B., *The Treasury, Whitehall, S.W.*
1855	Weldon, James Walton, 1, *St. James's-square, S.W.*
1873	Wells, W. Lewis, 66, *Old Broad-street, E.C.*
1855	Welton, Thomas Abercrombie, *Rectory Grove House, Clapham, S.W.*
1879	Wenley, James Adams, *Bank of Scotland, Bank-street, Edinburgh*
1876	Westgarth, William, 8, *Finch-lane, E.C.*

Year of Election.

1879 *Westlake, John, Q.C., M.P., LL.D.,
The River House, 3, Chelsea Embankment, S.W.

1882 *Whadcoat, J. H.,
Crown Buildings, Old Broad-street, E.C.

1883 *Whadcoat, William Edward,
Crown Buildings, Old Broad-street, E.C.

1878 Wharton, James,
10, *Buckland-crescent, Belsize-park, N.W.*

1884 Whibley, Frederick George,
Albion Chambers, Bristol.

1859 Whitbread, Samuel, M.P.,
10, *Ennismore-gardens, Princes-gate, S.W.*

1876 Whitcher, John, Jr., F.I.A.,
81, *King William-street, E.C.*

1863 White, Leedham,
44, *Onslow-gardens, S.W.*

1871 White, William,
70, *Lombard-street, E.C.*

1873 Whitehead, Jeffery,
39, *Throgmorton-street, E.C.*

1884 Whiteley, William,
Westbourne-grove, Bayswater, W.

1879 *Whitwill, Mark, J.P.,
Redland House, Durdham-park, Bristol.

1884 Wightman, Charles,
151, *Fenchurch-street, E.C.*

1878 Wilcox, William, L.R.C.P. (Edin.), M.R.C.S.,

1875 Wilkinson, Thomas Read,
Manchester and Salford Bank, Manchester.

1860 Willans, John Wrigley,
Beech Holme, Burley, Leeds.

1879 Williams, Edward,
Cleveland Lodge, Middlesborough.

1864 Williams, Frederick Bessant,
46, *Leicester-square, W.C.*

1881 Williams, Henry Maunder,
58, *Lewisham High-road, New Cross, S.E.*

1870 Williams, Henry Reader,
6, *Lime-street, E.C.; and Oak Lodge, Highgate, N.*

1876 Williams, John Worthey,
5, *Alroy-road, Finsbury-park, N.*

1884 Wilson, James,
Ochilview, Crieff, N.B.

1874 *Wilson, Robert Porter,
5, *Cumberland-terrace, Regent's-park, N.W.*

1872 *Winch, William R.,
North Mymms Park, Hatfield, Herts.

1884 Wishart, G. D.,
8, *Livingstone-avenue, Sefton-park, Liverpool.*

Date of Election.	
1885	Wolff, Captain M.P., *Monte Rosa, The Terrace, Richmond, Surrey.*
1868	Wood, H. W. I. (*Calcutta*), *c/o Messrs. Richardson*, 13, *Pall Mall, S.W.*
1883	Wood, Thomas Percival, 27, *Leadenhall-street, E.C.*
1877	Woodrow, Thomas John, *Sisland Cottage, Wanstead.*
1873	Woods, Henry, *Warnford Park, Bishop's Waltham, Hants.*
1838	Woolhouse, Wesley Stoker Barker, F.R.A.S., *Alwyne Lodge, Alwyne-road, Canonbury, N.*
1878	Worsfold, Rev. John Napper, M.A., *Haddlesey Rectory, near Selby, Yorkshire.*
1880	Wren, Walter, 7, *Powis-square, W.*
1883	Wright, Bryce McMurdo, *Hesket House*, 54, *Guilford-street, Russell-square, W.C.*
1838	*Wyatt-Edgell, Rev. Edgell, 40, *Lower Grosvenor-street, W.; Stanford Hall, Rugby*
1884	Wyllie, Colin Campbell, 34, *Clement-lane, E.C., and Walden, Chislehurst.*
1872	Yeatman, Morgan, *Shawfield, Bromley, Kent.*
1879	Yeats, John, LL.D., 7, *Beaufort-square, Chepstow.*
1877	*Youll, John Gibson, *Jesmond-road, Newcastle-on-Tyne.*
1882	Young, E. M., 123, *Bishopsgate-street Within, E.C.*

*** *The Executive Committee request that any inaccuracy in the foregoing list may be pointed out to the* Assistant Secretary *and that all changes of address may be notified to him, so that delay in forwarding communications and the publications of the Society may be avoided.*

HONORARY MEMBERS.

HIS ROYAL HIGHNESS THE PRINCE OF WALES, K.G.,

Honorary President.

EUROPE.

Austria and Hungary.

Year of Election.		
1874.	**Budapest**.....	M. CHARLES KELETI, Conseiller ministériel ; Chef du Bureau royal hongrois de Statistique. Docteur en droit ; Chevalier de l'ordre autrichien de Léopold ; Commandeur de l'ordre russe de St. Stanislaus et de l'ordre portugais de la Villa Viçosa ; Membre Associé de la Société de Statistique de Paris.
1877.	**Vienna**.....	DR. HUGH FRANCIS BRACHELLI, Aulic Councillor, Chief of the Statistical Department, Ministry of Commerce ; Professor at the Technical High School in Vienna ; President of the Permanent Commission for Commercial Values. Commander of the Russian Orders of St. Anna and St. Stanislaus, of the Luxembourg Order of the Oak-Crown ; Officer of the Order of the Italian Crown ; Knight of the Order of the House of Saxe-Ernestine ; Officer of Public Instruction of France, &c., &c.
1854.	.....	S. E. M. CHARLES BARON DE CZOERNIG, Conseiller intime actuel de S. Majesté Imp. et Royale ; Ancien Président de la Commission Centrale Imp. et Royale de Statistique à Vienne ; Membre Associé de la Société de Statistique de Paris.
1879.	„	PROFESSOR FR. XAVIER von NEUMANN-SPALLART, D.C.L., Professor of Political Economy and Statistics, Agricultural College, University of Vienna ; Aulic Councillor ; Member of the Imperial Statistical Commission ; Honorary Member of the Statististical Society of Paris, and of the Cobden Club, London.
1877.	„	M. MAX WIRTH, Ancien Chef du Bureau fédéral de Statistique en Suisse.

Belgium.

Year of Election.		
1879.	**Brussels**	M. le DR. EUGÈNE JANSSENS, Docteur en médecine, &c.; Inspecteur en chef du Service d'Hygiène de la Ville de Bruxelles. Membre de l'Académie royale de médecine, de la Commission centrale de Statistique, du Conseil Supérieur d'Hygiène, de la Commission médicale locale; Membre Sécrétaire de la Commission locale de Statistique, &c.; Chevalier de l'ordre de Léopold et de l'ordre de St. Maurice et de St. Lazare, &c.; Membre Associé de la Société de Statistique de Paris.

Denmark.

1878.	**Copenhagen** ..	PROFESSOR VIGAND ANDREAS FALBE-HANSEN, Professor of the University of Copenhagen; Member of the "Folkething."
1852.	,, ..	DR. PETER ANTON SCHLEISNER, Officer of Health of the City of Copenhagen; Member of the Royal General Board of Health for Denmark, Doctor of Medicine, Conseiller d'État; Knight of the Order of Dannebroge, and the Swedish Order of "Nordstjerne"; Corresponding Member of the Medical Society in Stockholm and Christiania, of the "Société de Médecine publique et d'Hygiène professionelle" in Paris, of the "Société d'Hygiène publique de Bordeaux," and of the "Société royale de Médecine publique de Belgique," &c.

France.

1880.	**Paris**.....	M. le DR. JACQUES BERTILLON, Docteur en médecine; Chef des Travaux statistiques de la Ville de Paris: Directeur des "Annales de Démographie internationale;" Professeur suppléant à l'École d'anthropologie; Membre de la Société de Statistique de Paris.
1856.	,, ...	M. MAURICE BLOCK, Membre de l'Institut de France (Académie des Sciences morales et politiques); Chevalier de la Légion d'Honneur et des ordres de Suède, Russie, Prusse. Bavière, Autriche-Hongrie, Grèce, Italie, Espagne, Portugal; Membre de la Société de Statistique de Paris.
1879.	,, ...	M. le DR. ARTHUR CHERVIN, Directeur de l'Institution des Bègues de Paris; Docteur en médecine et en chirurgie; Membre de la Commission permanente de Statistique de la Ville de Paris; Fondateur des "Annales de Démographie internationale," &c.; Membre de la Société de Statistique de Paris.

Year of Election.

1878. **Paris** ..... M. MAXIMIN DELOCHE, Membre de l'Institut de France; Directeur honoraire de la Statistique Générale de France; Commandeur de la Légion d'honneur; Officier de l'Instruction publique; Commandeur de l'ordre Imp. et Royale de François Joseph d'Autriche-Hongrie; Membre de diverses sociétés savantes.

1870. „ ..... M. CLÉMENT JUGLAR, président sortant de la Société de Statistique de Paris; vice-president de la Société d'Économie Politique de Paris.

1860. „ ..... M. PIERRE ÉMILE LEVASSEUR, Membre de l'Institut de France; Professeur au Collége de France et au Conservatoire des Arts et Métiers; ancien président de la Société de Statistique de Paris; vice-president de la Société Française de Tempérance et de la Société d'Économie Politique de Paris.

1860. „ ..... M. MARIE LOUIS PIERRE FELIX ESQUIROU DE PARIEU, Sénateur; Membre de l'Institut de France; Grand croix de la Légion d'Honneur, et de plusieurs ordres étrangers.

1876. „ ..... M. LE PRÉSIDENT DE LA SOCIÉTÉ DE STATISTIQUE DE PARIS.

1880. „ ..... L'HONORABLE M. JEAN BAPTISTE LÉON SAY. Sénateur; Membre de l'Institut de France; President de la Société de Statistique de Paris, de la Société Nationale d'Agriculture et de la Société Nationale d'Horticulture et de la Société de d'Économie Politique de Paris.

Germany.

1860. **Bavaria** ..... DR. GEORGE KARL LEOPOLD SEUFFERT, Chief Inspector and Director of the Royal Custom House at Simbach; Knight of the Order of St. Michael.

1878. **Berlin** ..... DR. CHARLES BECKER, Direktor des Kaiserlichen Statistischen Amts des Deutschen Reichs; Geheimer Ober-Regierungsrath; Member (Associé) of the Statistical Society of Paris.

1854. „ ..... DR. ERNEST ENGEL, formerly Director of the Royal Statistical Bureau of Prussia; Member (Associé) of the Statistical Society of Paris.

1876. **Frankfort** .... THE PRESIDENT OF THE STATISTICAL SOCIETY OF FRANKFORT.

1877. **Strasburgh** .... DR. GEORGE MAYR, Under Secretary of State in the Imperial Ministry for Alsace-Lorraine; formerly Director of the Royal Bureau of Statistics; Member (Associé) of the Statistical Society of Paris.

1871. **Stuttgart** ..... SIR HENRY PAGE-TURNER BARRON, Bart. British Minister.

Great Britain and Ireland.

Year of Election.		
1876.	**Dublin**.....	THE PRESIDENT OF THE STATISTICAL AND SOCIAL INQUIRY SOCIETY OF IRELAND.
1876.	**Manchester** ..	THE PRESIDENT OF THE MANCHESTER STATISTICAL SOCIETY.

Italy.

1879.	**Genoa**	SIGNOR GEROLAMO BOCCARDO, Senatore del Regno; Professore di Economia nella Regia; Scuola Superiore Navale, e di Statistica nella R. Università di Genova; Commendatore dei S.S. Maurizio e Lazzaro; Grande Ufficiale della Corona d'Italia; Cavaliere del Merito Civile di Savoja, &c.
1880.	**Pavia**	DR. LUIGI COSSA, LL.D., Professor of Political Economy at the University of Pavia; Honorary Member of the Cobden Club.
1874.	**Rome**	SIGNOR LUIGI BODIO, Direttore generale della Statistica del Regno; Professore; Member (Associé) of the Statistical Société of Paris.
1865.	„	REV. CESARE CONTINI, Priest and Beneficiato Vaticano; Member of the Statistical Society of Pavia; of the Hygienic Society of Italy; and of the Hygienic Society of Paris.
1880.	„	DR. ANGELO MESSEDAGLIA, Deputato al Parlamento; Professore Ordinario di Università; Commendatore.
1854.	**Turin**.....	SIGNOR GIOVANNI FLECHIA, Professore di Storia comparata delle lingue classiche e neolatine, e di sanscrito nell'Università di Torino; Commendatore; della R. Accademia delle Scienze di Torino e di quella dei Lincei; dell'ordine del Merito Civile di Savoja.

Russia.

1873.	**St. Petersburg**	HIS EXCELLENCY M. PETER SEMENOFF (SEMENOW), Senator, Conseiller privé de S.M.I. President of the Statistical Council; President of the Imperial Geographical Society; Honorary Member of the Academy of Sciences in St. Petersburg; Member (Associé) of the Statistical Society of Paris.
1877.	„	M. A. VESSÉLOVSKY, Sécrétaire du Comité Scientifique du Ministère Impérial des Finances.

Spain.

Year of Election.

1845. **Madrid**..... EXMO SEÑOR D. JOSÉ MAGÁZ Y JAYME, Lawyer, and Member of the Council of State; Grand Cross of Isabella Catolica; Commander of the Order of Carlos 3º; Ex-Deputy of the Cortes; Ex-Senator; Ex-Director-General of Treasury; Ex-Under-Secretary of the Ministry of Finance, &c.

Sweden and Norway.

1858. **Christiania**.... PROFESSOR THORKIL HALVORSEN ASCHEHOUG, Professor at the University of Christiania; Professor of Law and Political Economy at the University of Christiania; Chairman of the Board of Directors of the Royal Norwegian Hypottukbank; Member of the Institute of International Law, and of the Academies of Christiania, Trondhjem and Upsala, and of the Royal Historical Society of Denmark; Commander of the Norwegian Order of St. Olave; of the Swedish Order of the North Star; and Commander of the First Class of the Order of Danebrog.

1874. „ .. M. A. N. KIŒR, Director of the Statistical Bureau of Norway; Member (Associé) of the Statistical Society of Paris.

1860. „ THOMAS MICHELL, Esq., C.B., H.B.M. Consul-General in Norway.

1860. **Stockholm**.... M. FREDRIK THEODOR BERG, Ancien Directeur du Bureau Royal de Statistique de la Suède; Docteur en médecine; Dr. honoraire en philosophie et en jurisprudence; Membre de l'Académie Royale des Sciences à Stockholm, et de l'Académie Royale de l'Agriculture; Membre correspondant de la Commission centrale de Statistique à Bruxelles, de la Société de Statistique à Paris; Membre des Sociétés des médecins à Stockholm, Christiania, Copenhague et Helsingfors, &c.; Commandeur des Ordres Royales de l'Étoile polaire et de Wasa, &c.

Turkey.

1877. **Constantinople.** HIS HIGHNESS AHMED VÉFYK PACHA, Sénateur, &c.

AMERICA.

Dominion of Canada.

1876. **Ottawa**..... JOHN LANGTON, Esq., M.A., late Auditor-General.

United States.

Year of Election.		
1873.	**Albany, N.Y.** ..	THE HON. WILLIAM BARNES, Counsellor-at-Law; Ex-Superintendent of the Insurance Department, State of New York.
1876.	**New Haven, Conn.**	FRANCIS A. WALKER, Esq., Ph.D., LL.D., President of the Massachusetts Institute of Technology; Member of the National Academy of Sciences; President of the American Statistical Association, Boston.
1870.	**Norwich, Conn.**	THE HON. DAVID A. WELLS, D.C.L., LL.D., Late Special Commissioner of Revenue of the United States; Chairman of Commission for the Revision of Taxes of the State of New York; President of the American Social Science Association; Member of the Board of Arbitration of American Railways; Corresponding Member of the Institute of France; President of the American Free Trade League; Chairman 1883 of the Department of Finance of the American Social Science Association.
1870.	**Taunton, Mass.**	THE HON. JOHN ELIOT SANFORD, Lawyer; Speaker of the House of Representatives; Insurance Commissioner; Chairman of the Board of Harbour and Land Commissioners.
1880.	**Washington** ..	THE HON. CHARLES F. CONANT, late Assistant Secretary of the Treasury of the United States.
1881.	„	JOHN S. BILLINGS, Esq., M.D., Surgeon United States Army; Member of the National Academy of Science, &c.
1877.	„	EDWARD YOUNG, Esq., A.M., Ph.D., formerly Chief of the Bureau of Statistics, United States of America.

AUSTRALASIA.

New South Wales.

1876.	**Sydney**.....	EDWARD GRANT WARD, Esq., Registrar-General, and a Magistrate of the Colony of New South Wales.

New Zealand.

1876.	**Wellington**....	JAMES HECTOR, Esq., M.D., C.M.G., F.R.S., L. and E., F.G.S., &c. Director of the Geological Survey, of the Meteorological Department, and of the New Zealand Institute.

Queensland.

Year of Election.		
1877.	**Brisbane**.....	HENRY JORDAN, Esq., Member of Legislative Assembly.

Tasmania.

1876.	**Hobart**.....	EDWIN CRADOCK NOWELL, Esq., J.P., Clerk of Executive and Legislative Councils, and late Government Statistician.

Victoria.

1875.	**Melbourne**	HENRY HEYLYN HAYTER, Esq., C.M.G., Government Statist of Victoria. Officier de l'Instruction Publique (France) ; Honorary Member of the Statistical and Social Inquiry Society of Ireland, of the Statistical Association of Tokio, and of the Royal Society of Tasmania ; Honorary Corresponding Member of the Statistical Society of Manchester, of the Geographical Society of Bremen, and of the Royal Society of South Australia ; Fellow and Honorary Corresponding Secretary for Victoria of the Royal Colonial Institute ; Member (Associé) of the Statistical Society of Paris.
1858.	,, ...	WILLIAM HENRY ARCHER, Esq., K.S.G., F.I.A., F.L.S., &c., Barrister-at-Law.

Note.—The Executive Committee request that any inaccuracies in the foregoing List of Honorary Members may be pointed out, and that all changes of address may be notified to the Secretary, so that delay in forwarding communications and the publications of the Society may be avoided.

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RULES OF THE STATISTICAL SOCIETY.

Objects of the Society.

1. THE Statistical Society was established to collect, arrange, digest, and publish facts illustrating the condition and prospects of society, in its material, social and moral relations. These facts are for the most part arranged in tabular forms, and in accordance with the principles of the numerical method.

The Society not only collects new materials, but condenses, arranges, and publishes those already existing, whether unpublished or published in diffuse and expensive forms, in the English or in any foreign language.

The Society likewise promotes the discussion of legislative and other public measures from the statistical point of view. These discussions form portions of the Transactions of the Society.

Constitution of the Society.

2. The Society consists of Fellows and Honorary Members, elected in the manner laid down in the following rules.

Number of Fellows and Honorary Members.

3. The number of Fellows shall be unlimited. Foreigners or British subjects of distinction residing abroad may be admitted as Honorary Members: of whom the number shall not be more than seventy at any one time.

Proposal of Fellows.

4. Every Candidate for admission as a Fellow of the Society, shall be proposed by two or more Fellows, who, shall certify from their personal knowledge of him or of his works, that he is a fit person to be admitted a Fellow of the Statistical Society. Every such certificate having been read and approved at a Meeting of the Council, shall be suspended in the meeting-room of the Society until the following Ordinary Meeting, at which the vote shall be taken upon it.

Election of Fellows.

5. In the election of Fellows, the votes shall be taken by ballot. No person shall be admitted unless at least sixteen Fellows vote, and unless he have in his favour three-fourths of the Fellows voting.

Admission of Fellows.

6. Every Fellow elect shall appear for his admission on or before the third Ordinary Meeting of the Society after his election, or within such time as shall be granted by the Council.

The manner of admission shall be thus:—

Immediately after the reading of the minutes, the Fellow elect, having first paid his subscription for the current year or his composition, shall sign the obligation contained in the Fellowship-book, to the effect following:—

"We, who have underwritten our "names, do hereby undertake, each for "himself, that we will endeavour to "further the good of the Statistical "Society for improving Statistical "Knowledge, and the ends for which "the same has been founded; that "we will be present at the Meet-"ings of the Society as often as con-"veniently we can, and that we will "keep and fulfil the Rules and Orders "of this Society: provided that when-"soever any one of us shall make known, "by writing under his hand, to the "President for the time being, that he "desires to withdraw from the Society, "he shall be free thenceforward from "this obligation."

Whereon the President, taking him by the hand, shall say,—"*By the autho-"rity and in the name of the Statis-"tical Society I do admit you a "Fellow thereof.*"

Upon their admission Fellows shall have the right of attaching to their names the letters F.S.S.

Admission of Honorary Members.

7. There shall be Two Meetings in the year, on such days as shall be hereafter fixed by the Council, at which *Honorary Members* may be elected.

No Honorary Member can be recommended for election but by the Council. Any Member of the Council may propose a Foreigner or British subject of distinction residing abroad at any Meeting of the Council, delivering at the same time a written statement of the qualifications, offices held by, and published works of the person proposed; and ten days' notice at least shall be given to every Member of the Council, of the day on which the Council will vote by ballot on the question whether they will recommend the person proposed. No such recommendation to the Society shall be adopted unless at least three-fourths of the votes are in favour thereof.

Notice of the recommendation shall be given from the chair at the Meeting of the Society next preceding that at which the vote shall be taken thereon. No person shall be elected an Honorary Member unless sixteen Fellows vote and three-fourths of the Fellows voting be in his favour.

The Council shall have power to elect as Honorary Members, the Presidents for the time being of the Statistical Societies of Dublin, Manchester, and Paris, and the President of any other Statistical Society at home or abroad.

Payments by Fellows.

8. Every Fellow of the Society shall pay a yearly subscription of *Two Guineas*, or may at any time compound for his future yearly payments by paying at once the sum of Twenty Guineas.*

Defaulters.—Withdrawal of Fellows.

9. All yearly payments are due in advance on the 1st of January, and if any Fellow of the Society have not paid his subscription before the 1st of July, he shall be applied to in writing by the Secretaries, and if the same be not paid before the 1st of January of the second year, a written application shall again be made by the Secretaries, and the Fellow in arrear shall cease to receive the Society's publications, and shall not be entitled to any of the privileges of the Society until such arrears are paid; and if the subscription be not discharged before the 1st of February of the second year, the name of the Fellow thus in arrear shall be exhibited as a defaulter on a card suspended in the meeting-rooms; and if, at the next Anniversary Meeting, the amount still remain unpaid, the defaulter shall be announced to be no longer a Fellow of the Society, the reason for the same being at the same time assigned. No Fellow of the Society can withdraw his name from the Society's books, unless all arrears be paid; and no resignation will be deemed valid unless a written notice thereof be communicated to the Secretaries. No Fellow shall be entitled to vote at any Meeting of the Society until he shall have paid his subscription for the current year.

Expulsion of Fellows.

10. If any Fellow of the Society, or any Honorary Member, shall so demean himself that it would be for the dishonour of the Society that he longer continue to be a Fellow or Member thereof, the Council shall take the matter into consideration; and if the majority of the Members of the Council present at some Meeting (of which and of the matter in hand such Fellow or Member, and every Member of the Council, shall have due notice) shall decide by ballot to recommend that such Fellow or Member be expelled from the Society, the President shall at the next Ordinary Meeting announce to the Society the recommendation of the Council, and at the following Meeting the question shall be decided by ballot, and if at least three-fourths of the number voting are in favour of the expulsion, the President shall forthwith cancel the name in the Fellowship-book, and shall say,—

"By the authority and in the name "of the Statistical Society, I do declare "that A. B. (naming him) is no longer "a Fellow (or Honorary Member) "thereof."

* Cheques should be made payable to "The Statistical Society," and crossed "Messrs. Drummond and Co."

And such Fellow or Honorary Member, shall thereupon cease to be of the Society.

Trustees.

11. The property of the Society shall be vested in *three Trustees*, chosen by the Fellows. The Trustees are eligible to any other offices in the Society.

President, Council, and Officers.

12. The Council shall, besides the Honorary Vice-Presidents and the Trustees, consist of thirty-one Members, of whom one shall be the President, and four be nominated Vice-Presidents. The Council shall be elected as hereafter provided. Any five of the Council shall be a quorum. From the Council shall be chosen a *Treasurer, three Secretaries*, and a *Foreign Secretary*, who may be one of the Secretaries. Six Fellows, at least, who were not of the Council of the previous year, shall be annually elected.

Election of President and Officers.

13. The President shall be chosen yearly by the Fellows. The same person shall not be eligible more than two years in succession.

The former Presidents who are continuing Fellows of the Society shall be Honorary Vice-Presidents; four Vice-Presidents shall be yearly chosen from the Council by the President.

Any Honorary Vice-President may take part in the deliberations of the Council on expressing a wish to that effect: and when attending the Meetings of the Council, shall exercise all the rights and powers of a Member of the Council.

The Treasurer and Secretaries shall be chosen yearly by the Fellows from the Council.

Election of Council.

14. The Council shall, previously to the Anniversary Meeting, nominate, by ballot, the *Fellows whom they recommend* to be the next President and Council of the Society. They shall also recommend for election a Treasurer and Secretaries (in accordance with Rule 12). Notice shall be sent to every Fellow whose residence is known to be within the limits of the metropolitan post, at least a fortnight before the Anniversary Meeting, of the names of Fellows recommended by the Council.

Extraordinary Vacancies.

15. On any *extraordinary vacancy* of the Office of the President, or other Officer of the Society, or in the Council, the Secretaries shall summon the Council with as little delay as possible, and a majority of the Council, thereupon meeting in their usual place, shall, by ballot, and by a majority of those present, choose a new President, or other Officer of the Society, or Member of the Council, to be so until the next Anniversary Meeting.

Committees.

16. The Council shall have power to appoint *Committees of Fellows* and also an Executive Committee of their own body. The Committees shall report their proceedings to the Council. No report shall be communicated to the Society which is not approved by the Council.

Meetings Ordinary and Anniversary.

17. The *Ordinary Meetings* of the Society shall be monthly, or oftener, during the Session, which shall be from the 1st of November to the 1st of July, both inclusive, on such days and at such hours as the Council shall declare. The *Anniversary Meeting* shall be held on such day in June of each year as shall be appointed by the Council for the time being.

Business of Ordinary Meetings.

18. The business of the *Ordinary Meetings* shall be to admit Fellows, to read and hear reports, letters, and papers on subjects interesting to the Society. Nothing relating to the rules or management of the Society shall be discussed at the Ordinary Meetings, except that the *Auditors' Report* shall be received at the Ordinary Meeting in *February*, and that the Minutes of the Anniversary Meeting, and of every Special General Meeting, shall be confirmed at the next Ordinary Meeting after the day of such Anniversary or Special General Meeting. *Strangers* may be introduced to the Ordinary

Meetings, by any Fellow, with the leave of the President, Vice-President, or other Fellow presiding at the Meeting.

Business of Anniversary Meeting.

19. The business of the *Anniversary Meeting* shall be to elect the Officers of the Society, and to discuss questions on its rules and management. No Fellows or Honorary Members shall be proposed or admitted at the Anniversary Meeting. No Fellow shall moot any question on the rules or management of the Society at the Anniversary Meeting, unless after *three weeks' notice* thereof given to the Council, but amendments to any motion may be brought forward without notice, so that they relate to the same subject of motion. The Council shall give fourteen days' notice to every Fellow of all questions of which such notice shall have been given to them.

Special General Meetings.

20. The Council may, at any time, call a *Special General Meeting* of the Society when it appears to them necessary. Any ten Fellows may require a Special General Meeting to be called, by notice in writing signed by them, delivered to one of the Secretaries at an Ordinary Meeting, specifying the questions to be moved. The Council shall, within one week of such notice, appoint a day for such Special General Meeting, and shall give one week's notice of every Special General Meeting, and of the questions to be moved, to every Fellow within the limits of the metropolitan post, whose residence is known. No business shall be brought forward at any Special General Meeting other than that specified in the notice for the same.

Auditors.

21. At the *first Ordinary Meeting* of each year, the Fellows shall choose two *Auditors*, not of the Council, who, with one of the Council, chosen by the Council, shall audit the Treasurer's accounts, and report thereon to the Society, which report shall be presented at the Ordinary Meeting in February. The Auditors shall be empowered to examine into the particulars of all expenditure of the funds of the Society where they shall see occasion, and may report their opinion upon any part of it.

Duties of the President.

22. The *President* shall preside at all Meetings of the Society, Council, and Committees, which he shall attend, and in case of an equality of votes, shall have a second or casting vote. He shall sign all diplomas of admission of Honorary Members. He shall admit and expel Fellows and Honorary Members, according to the rules of the Society.

Duties of the Treasurer.

23. The *Treasurer* shall receive all moneys due to, and pay all moneys due from, the Society, and shall keep an account of his receipts and payments. No sum exceeding Ten Pounds shall be paid but by order of the Council, excepting always any lawful demand for rates or taxes. He shall invest the moneys of the Society in such manner as the Council shall from time to time direct.

Duties of the Secretaries.

24. The *Secretaries* shall, under the control of the Council, conduct the correspondence of the Society; they or one of them shall attend all Meetings of the Society and Council, and shall have the care of duly recording the Minutes of the Proceedings. They shall issue the requisite notices, and read such papers to the Society as the Council may direct.

Powers of the Vice-Presidents.

25. A *Vice-President*, whether Honorary or nominated, in the chair, shall act with the power of the President, in presiding and voting at any Meeting of the Society or Council, and in admitting Fellows; but no Vice-President shall be empowered to sign diplomas of admission of Honorary Members, or to expel Fellows. In the absence of the President and Vice-Presidents, any Fellow of the Society may be called upon, by the Fellows then present, to preside at an Ordinary Meeting. The Fellow so presiding may admit Fellows, but shall not be empowered to act otherwise as President, or Vice-President.

Powers of the Council.

26. The Council shall have control over the papers and funds of the Society, and may, as they shall see fit, direct the publication of papers and the expenditure of the funds, so, that they shall not at any time contract engagements on the part of the Society beyond the amount of the balance that would be at that time in the Treasurer's hands, if all pre-existing debts and liabilities had been satisfied.

27. The Council shall be empowered at any time to frame *Regulations* not inconsistent with these rules, which shall be, and remain in force until the next Anniversary Meeting at which they shall be either affirmed or annulled; but no Council shall have power to renew Regulations which have once been disapproved at an Anniversary Meeting.

28. No Dividend, Gift, Division, of Bonus in money shall be made by the Society, unto or between any of the Fellows or Members, except as hereinafter provided.

29. The Council shall publish a Journal of the Transactions of the Society, and such other Statistical Publications, as they may determine upon, and may from time to time pay such sums to Editors and their assistants, whether Fellows of the Society or not, as may be deemed advisable.

30. All communications to the Society are the property of the Society, unless the Council allow the right of property to be specially reserved by the Contributors.

REGULATIONS OF THE LIBRARY.

1. The Library is open daily from 10 a.m. till 5 p.m., except on Saturdays, when it closes at 2 p.m.; and it is entirely closed during the month of September.

2. Members of the Society are permitted to take out Books on making personal application, or by letter addressed to the Librarian.

3. Members are not to have more than two works at a time, nor keep any books longer than a month.

4. Scientific Journals and Periodicals are not circulated until the volumes are completed and bound.

5. Cyclopædias and works of reference are not circulated.

6. Any Member damaging a book, either replaces the work, or pays a fine equivalent to its value.

7. Books taken from the shelves for reference, are *not* to be replaced, but must be laid on the Library table.

8. The Secretary shall report to the Council any infringement of these regulations.

DONORS TO THE LIBRARY.

During the Year 1885.

Foreign Countries.

Argentine Republic.
Austria and Hungary
Belgium.
Brazil.
Bulgaria.
China.
Denmark.
Egypt.
France.
Germany.
Prussia.
Bavaria.
Saxony.
Guatemala.
Italy.
Japan.
Mexico.
Netherlands.
Portugal.
Roumania.
Russia.
Spain.
Sweden and Norway.
Switzerland.
United States.
Uruguay.

The States of—

California.
Illinois.
Massachusetts,
Michigan.
Minnesota.
New York.
Rhode Island.
Wisconsin.

Indian, Colonial, and other Possessions.

Bengal.
Canada. *Dominion of.*
Cape of Good Hope.
Cyprus.
India (British).
Jamaica.
Manitoba.
Mauritius.
New South Wales.
New Zealand.
Queensland.
South Australia.
Tasmania.
Victoria.

Public Departments.

The Admiralty.
„ Agricultural Department.
„ Army Medical Department.
„ Board of Trade.
„ Colonial Office.
„ Convict Prisons, Directors of.
„ Crown Agents for the Colonies.
„ Customs.
„ Factories, Inspectors of.
„ Fire Brigade, Metropolitan.
„ Friendly Societies, Registrar of.
The Home Office.
„ India Office.
„ Local Government Board.
„ Mint, The Royal.
„ Naval Medical Department.
„ Police, London Metropolitan.
„ Registrar-General of England.
„ „ „ Ireland.
„ „ „ Scotland.
„ Warden of Standards.
„ Woods, Forests, &c.

Abbott, Joseph, Esq.
Actuaries, The Institute of.
Agriculture, Central Chamber of.
Aitchison, W. J., Esq.
Allen, Messrs. W. H., and Co., London.
Allnutt, Henry, Esq.
American—
Academy of Arts and Sciences, Boston.
Geographical Society of N. York.
Philosophical Soc. of Philadelphia.
Statistical Association, Boston.
Argentine Legation, London.

During the Year 1885—*Continued.*

Arts, Society of.
Asiatic Society of Bengal.
„ „ Japan.
Association of Chambers of Commerce of the United Kingdom.
Astor Library, New York U.S.A.
Athenæum, The Editor of.
Atkinson, Edward, Esq., New York.
Australasian Insurance Record, The Editor of.
Austrian Statistical Commission.

Baak, E., Esq.
Bailey, W. F., Esq.
Baker, Dr. H. B., Lansing, U.S.A.
Bankers' Institute, London.
„ Magazine, Editor of, London.
Bankers' Magazine, Editor of, New York.
Barnes, The Hon. W.
Barron, Sir Henry, Bart.
Barry, F. W., Esq., M.D.
Bastable, C. F., Esq.
Beazeley, M. W., Esq.
Beggs, T., Esq.
Behm, G., Esq.
Belgium, Academy, Royal.
Bell, J. T., Esq.
Berg, Dr. F. T., Stockholm.
Berlin, Statistical Bureau of.
Bertillon, Dr. J., Paris.
Bevan, G. P., Esq.
Billings, Dr. J. S., Washington.
Birt, W., Esq.
Boccardo, Signor G., Genoa.
Bodio, Professor Luigi, Rome.
Böhmert, Dr. V., Dresden.
Boinet, M.A., Cairo.
Bonaparte, Prince Roland, Paris.
Bourinot, J. G., Esq., Ottawa.
Boutcher, Mortimer, & Co., Messrs.
Bouteron, E., Esq., Cairo.
Boyle, R., and Sons, The Messrs.
Brachelli, Dr. H. F., Vienna.
Breslau, Statistical Bureau of.
British Association, The.
„ Trade Journal, The Editor of.
„ Iron Trade Association.
Briton Life Association Limited.
Brookes and Green, Messrs.
Brussels, The Bureau of Hygiene.
„ The Burgomaster.
Buchanan, Dr. George.
Budapest, Statistical Bureau.
Buenos Ayres, Statistical Bureau of.
Building Societies, &c., Gazette.
Bunce, John T., Esq.
Burchard, H. C., Esq., Washington.
Burridge, A. F., Esq.

Caillard, A., Esq., Alexandria.
Cannon, H. W., Esq., Washington.
Cape of Good Hope, Colonial Sec.
„ The Education Office.
Carter, J. R., Esq., London.
Carusso, M. C. D., Trieste.
Cassell and Co., Messrs., Limited.
Cater, Sons, and Co., Messrs. W. J.
Chadwick, David, Esq.
Chailley, Joseph, Esq.
Cheysson, M. E., Paris.
City Quarterly Magazine, The Editor of.
Civil Engineers, Institution of.
Cobden Club, the Committee of.
Cockshott, J. J., Esq.
Collins, Louis, Esq.
Commercial World, The Editor of.
Coni, Dr. E. R., Buenos Ayres.
Connecticut Life Insurance Compy.
Conti, Signor, G. B., Milan.
Contini, D. Cesare, Rome.
Craigie, Major P. G., London.
Crellin, P., Esq.
Curtis, Charles E., Esq.
Czoernig, Carl Freiherrn von.

Danvers, F. C., Esq.
Davin, N. F., Esq.

During the Year 1885—*Continued.*

Day, S., Esq.
Denmark Political Economy Soc.
Doyle, Patrick, Esq.
Dublin, Chief Com. of Police.
Dunant, Dr. P. L., Geneva.
Durant and Co., Messrs.

East India Association, London.
Eaton and Sons, Messrs. H. W.
Economist, The Editor of.
Economista, Florence, The Editor of.
Économiste Français, The Editor of.
Edinburgh, The City Chamberlain.
„ Royal Society of.
Ellison and Co., Messrs., Liverpool.

Fairlamb, W., Esq., York.
Finance Chronicle, The Editor of.
Flax Supply Association, Belfast.
Fossick, W. G., Esq.
Foville, M. A. de, Paris.
Frankfort-on-Maine, The Statistical Bureau of.
Franklin Institute, Philadelphia.
Freemantle, Hon. C. W., C.B.

Geddes, Patrick, Esq.
Geneva, Administrative Council of.
Glasgow, The Mitchell Library.
„ Philosophical Society of.
Gooch and Cousens, Messrs.
Guatemala, The Government of.
Gunn, A., Esq.
Guy, Dr. W. A., F.R.S., &c.
Guyot, M. Yves.

Haggard, Frederick T., Esq.
Halton, W. F., Esq., Cairo.
Hamburg Chamber of Commerce.
„ Statistical Bureau of.
Harrison and Sons, Messrs., London.
Hart, Sir Robt., K.C.M.G., Peking.
Hayter, H. H., Esq., C.M.G., Melbourne.
Hector, Dr. James, C.M.G., Wellington.
Heywood, James, Esq., F.R.S.
Hill, Dr. A., Birmingham.
Hoar, Hon. G. F., Washington.
Howard Association, London.
Humphreys, N. A., Esq.

Illinois Deaf and Dumb Institute.
Illustrated Science Monthly, The Editor of.
Insurance Gazette, The Editor of.
„ Post, The Editor of.
„ Record, The Editor of.
Investors' Monthly Manual, The.
Iron and Coal Trades' Review, The.
Issanchou, M. Henri.
Italian Health Society, The Royal.

Janssens, Dr. E., Brussels.
Jarvis, Dr. E., U.S.A.
Jenkins, F. L., Esq., U.S.A.
Johnston, Rev. J., Upper Norwood.
Jones, B., Esq.

Kay, Robert, Esq., Adelaide.
Keleti, Dr. C., Vienna.
Kelly, Charles, Esq., M.D., F.R.C.P.
Kőrösi, Joseph, Esq., Budapest.
Kummer, Dr. J., Bern.
Kyshe, J. B., Esq., Mauritius.

Lack, H. Reader, Esq.
Landale, R. J., Esq.
Layton, Messrs. C. and E.
Levasseur, M. Emile, Paris.
Levi, Prof. Leone, LL.D.
Lewis, A. L., Esq.
Liberty and Property Defence League, The.
Lisbon, Geographical Society of.
Littledale, Ragg, and Co., Messrs.
Liverpool, Lit. and Phil. Society.
„ Free Public Library.
Local Taxation Committee.

During the Year 1885—*Continued.*

London Chamber of Commerce.
London Hospital, The Secretary.
Lord, John S., Esq., Illinois.
Ludlow, J. M., Esq.
Lukas, Franz, Esq.

Machinery Market, Editor of.
Macmillan and Co., Messrs., London.
Magáz y Jayme, Exmo Señor D. José, Madrid.
Manchester—
Literary and Philosophical Soc.
Public Free Library.
Statistical Society of.
Marcoartu, Don. A. de.
Marshall, Professor A.
Martin, John Biddulph, Esq., M.A.
Massachusetts, Board of Health, Lunacy, and Charity.
„ Bureau of Statistics of Labour.
Mauritius Almanac, &c., Editor of.
„ The Colonial Secretary.
Mechanical Engineers, Institution of
Merriman, The Hon. W.
Metropolitan Public Garden, &c., Association.
Michigan State Board of Health.
Middlesex Hospital.
Minot, M. Eugène, Paris.
Mitchell Library, Glasgow.
Money, The Editor of.
Moss and Co., Messrs. R. J.
Moysey, M. E., Esq.
Munro, J. C. E., Esq., Manchester.
Murray, A., Esq.

Nagai, K., Esq., Japan.
Naples, The Municipality of.
National Anti-Bounty League.
Nature, The Editor of, London.
Netherlands—
„ Legation, London.
„ Statistical Institute.
„ Statistical Society of.
Neumann-Spallart, Dr. F. X. von.
New South Wales, Agent-Genrl. for.
New York State Library.
Nicol, James, Esq., Glasgow.
Nimmo, Jos., Esq., jun., Washington.
Norway, Central Statistical Bureau of.
„ The Royal University of.

Ogle, Dr. W.

Page and Gwyther, Messrs.
Paris, Statistical Bureau of.
„ Statistical Society of.
Peñafiel, Dr. A., Mexico.
Penedo, H. E., Baron de, London.
Petersen, Aleksis, Esq., Copenhagen.
Pierrard, Paul, Esq.
Pixley and Abell, Messrs.
Platt, James, Esq.
Policy-Holder Journal, The Editor of the.
Port Elizabeth Chamber of Commerce.
Powell, Messrs. T. J. and T.
Prague, Statistical Bureau of.
Prinsep, C. C., Esq., London.
Prussia, Royal Statistical Bureau of.
Purdy, Frederick, Esq.

Queensland, Registrar-General of.

Rabino, J., Esq., Alexandria.
Raikes, Major, G. A.
Ravenstein, E. G., Esq.
Rawson, Sir R. W., K.C.M.G., C.B.
Reims, Bureau of Hygiene.
Review, The Editor of.
Révue Bibliographique Universelle, The Editor of, Paris.
Révue Géographique Internationale, The Editor of, Paris.
Rhodes, John G., Esq.
Robyns, M. Jules.
Ronald and Sons, Messrs.
Roper, William, Esq.
Roth, H. Ling, Esq.

During the Year 1885—*Continued.*

Roulliet, M. Antony.
Royal Agricultural Society.
„ Asiatic Society.
„ „ Bombay Branch.
„ College of Surgeons.
„ Colonial Institute.
„ Geographical Society.
„ Institution of Great Britain.
„ Irish Academy.
„ Med. and Chirurgical Society.
„ National Life Boat Inst.
„ Society.
„ United Service Institution.

St. Bartholomew's Hospital, London.
Sanitary Record, The Editor of.
Sassoon Mechanics' Institute.
Saxony, Royal Statistical Bureau.
Scandinavia, The Editor of.
Scribner, Messrs., New York.
Sensai, Nagayo, Esq., Japan.
Shaw, Capt. E. M., C.B., London.
Smithsonian Institution, U.S.A.
Snow, Dr. E. M., U.S.A.
Social Science Association.
Society of Medical Officers of Health.
South Australia, Chief Secretary of.
„ Royal Society of.
Spratt, Vice-Admiral, T. A. B.
Stanford, E., Esq.
Statist, The Editor of.
Statistical and Social Inquiry Society of Ireland.
Stein, M. A. von, St. Petersburg.
Streng, Hermann, Esq.
Surgeon-General U. States Army.
Surveyors' Institution, The
Sweden, Central Statistical Bureau.
Switzerland, Statistical Bureau.

Tasmania, Royal Society of.
Textile Manufacturer, Editor of.
Thompson, P. J., Esq.
Thompson, Messrs. W. J. and H.
Thomson, Hankey and Co., Messrs.
Thubron, R., Esq.
Trendell, A. J. R., Esq.
Trübner and Co., Messrs., London.
Turner, William, Esq., Cardiff.

University College, London.
Urmson, Elliott, and Co., Messrs.
Uruguay, The Consul-General for.

Van de Linde, G., Esq.
Van Nierop, A. H., Esq.
Vessélovsky, A., Esq., St. Petersburg.
Victoria, Royal Society of.
Vincent, Edgar, Esq., Cairo.

Walras, M. Leon.
Wandsworth Board of Works.
Watt, W., Esq.
Wells, The Hon. David A., U.S.A.
Wigan, Free Public Library.
Wirth, Max, Esq., Vienna.
Wolff, Captain, M.P.
Wood, W. Martin, Esq.
Wool and Textile Fabrics, The Editor of.
Woolston and Beeton, Messrs.
Wright, Bryce, Esq.
Wright, Hon. C. D., Boston, Mass.

Yvernès, M., Paris.

Zogheb, Vicomte Antoine, Egypt.

STATISTICAL SOCIETY'S LIBRARY.

DESIDERATA.

The following is a List of some of the Odd Numbers, Parts, and Volumes, of Works wanting in the Library. They are arranged alphabetically under the following heads:—(a) *Foreign Countries;* (b) *India, Colonial, and other Possessions;* (c) *United Kingdom and its several Divisions;* (d) *Authors, &c.;* (e) *Societies, &c.;* (f) *Periodicals, &c.*

Donations of any portion thereof will be acceptable, and will be duly acknowledged by the Society.

[The Dates and Numbers are in all cases inclusive.]

(a) Foreign Countries.

Belgium—

Annuaire Statistique de la Belgique. 1e année (1870).
,, de l'Observatoire de Bruxelles. 1833-54, 1856-64, 1874, *et seq.*
Bulletin de la Commission Centrale de Statistique. Vols. v—vii.
Documents statistiques recueillis et publiés par le Ministre de l'Intérieur. 4e et 5e publications.
Musée de l'Industrie—
Bulletin du—, Mai, Septembre—Décembre, 1883, *et seq.*
Catalogue de la Bibliothèque Technologique.
Observations de la Cour des Comptes. Part for 1832.
Rapports du jury et documents de l'Exposition de l'Industrie belge en 1841.
Recensement de la population en 1866.
Relevé de la population du Royaume de Belgique, 1 Janvier, 1831.
Relevé proportionnel des naissances, des mariages, et des décès 1841-67.
Résumé du Rapport sur la situation des provinces et des communes de Belgique. 1830-40.
Statistique Générale de la Belgique. Exposé de la Situation du Royaume. 1831-40; 1841-50.
Ville de Bruxelles—
Annuaire Démographique et Tableaux Statistiques des causes de décès. Par le Docteur E. Janssens. 8vo. Bruxelles. Nos. 1, 10, 12, and 14.
Bulletin Hebdomadaire de Statistique Démographique et Medicale de la Ville de Bruxelles. (For the first ten years, 1870-79.)

Académie Royale des Sciences et Belles Lettres de Bruxelles, Nouveaux Mémoires. Vols. i—ix.
Almanach royal officiel de Belgique, 1840-83.

Egypte. Guide Annuaire d'—. Par M. François Levernay. (Any numbers before 1872-73, and for 1873-74, *et seq.*).

France. Abolition de l'Esclavage dans les Colonies anglaises. Vols. i et ii (1840-41).

Annuaire du Bureau des Longitudes. 1795-1813, 1815-17, 1828, 1833-34, 1837-40, 1843, 1845-68, 1871, 1874-77, 1880, *et seq.*

Atlas Graphique et Statistique du Commerce de la France.

„ Statistique de l'Administration des Forêts de la France.

Compte rendu sur le Recrutement de l'armée pendant les années 1867, *et seq.*

Enquête sur les Principes et les Faits Généraux qui régissent la Circulation Monétaire et Fiduciaire. Paris, 1867. Vol. vi.

Exposé de la situation de l'Empire, présenté au Sénat et au Corps Legislatif. 1868.

Ministère de l'Agriculture, Bulletin. 1e et 2e années (1882 et 1883); 3e année (1884), No. 3.

Statistique de la France. Deuxième série. Statistique Agricole. 1858-59. 2 vols. L'Introduction, et 1er Partie.

Tableaux Généraux du Commerce de la France, &c., pendant les années 1846, 1847, 1850, et 1868 à 1876.

Paris, Ville de—

Recherches Statistiques sur la Ville de Paris et le Département de la Seine. Vol. vi. Anneés 1837-56.

Annuaire Statistique de la Ville de Paris. Anneé 1882.

Almanach de Paris for 1866, 1867, 1869, *et seq.*

Annuaire de l'Economie Politique et de la Statistique (Block et Guillaumin). The first twelve volumes (1844-55) and for 1866.

Bordeaux. Académie des Sciences, &c. Vol. v, part 4; vols. vi—viii, xii; vol. xiii, parts 2, 3, and 4; vol. xvi, part 4, *et seq.*

Journal des Economistes—

1e Serie, the first twenty-one volumes (1842-48).

2e Serie. The number for July, 1859, of vol. xxiii.

Tables triennales comprenant les dix-huitième années de 1866 à 1883.

L'Economiste Français—

Vol. i, 1873, Table Analytique Général des Matières.

No. 35 (1 Sept., 1877).

No. 30 (26 Juillet, 1879) et No. 31 (2 Août, 1879).

Vol. i, 1883, Analytical and Alphabetical Table of Contents and title page.

Marseilles. Société de Statistique de—. Répertoire des Travaux. 8vo. Eighteen volumes, from 1840 to 1858.

Revue Geographique Internationale. Nos. 1—22, 26, 50, 52—54, 56, 57, 63, 64, 84, 85, and 86, and maps to Nos.47 and 55.

Société Internationale des Études pratiques d'Economie Sociale. Les Ouvriers des Deux Mondes. Vol. ii. Paris, 1857.

Germany—

Berlin. Report of the Vaccination Commission, presented to the Reichstag in April, 1885.

Baden. Beiträge zur Statistik der inneren Verwaltung des Grossherzogthums Baden. 8, 9 (1tes Heft), 17—21, 23, 24, 30.

Germany—*Contd.*

Frankfort—

Jahresbericht des Frankfurter Vereins für Geographie und Statistik. 1857-58—1859-60, 1866-67, 1874-75, *et seq.*

Jahresbericht für Handelskammer zu Frankfurt. 1872 *et seq.*

Jahresbericht über die Verwaltung des Medicinalwesens. ii—vi (1858-62), x—xi (1866-67).

Statistische Mittheilungen über den Civilstand der Stadt Frankfurt. i Band 1—4 Hefte, ii Band 2 Heft.

Mecklenburg-Schwerin. Beitrage zur Statistik Mecklenburgs. Vom Grossherzoglichen Statistischen Bureau zu Schwerin. 1860-74, 1877, *et seq.*

Oldenburg. Statistische Nachrichten über das Grossherzogthum Oldenburg, herausgegeben vom Statistischen Bureau. Hefte 1—4, 8—11, 14, *et seq.*

Prussia. Preussische Statistik. Heft 58.

Saxony—

Kalender und Statistisches Jahrbuch . . . Sachsen, 1873.

Mittheilungen des Statistischen Vereins für das Kong. Sachsen, Nos. 1—5, 7, 10, 15, 16, 19, *et seq.*

Zeitschrift des k. sächsischen statistischen Bureaus. xix, Nos. 1—6, 10—12; xx, Nos. 1—3.

Wurtemberg. Wurttembergische Jahrbücher für Statistik und Landeskunde. Jahrgang 1876, Heft 2. Jahrgang 1877, Hefte 3—5.

Almanach de Gotha. The first ninety-six volumes.

Rechenschaftsbericht der Lebensversicherungsbank für Deutschland in Gotha. 1829-47, 1849, 1852, 1859, 1861, 1864, 1866, und 1870.

Italy—

L'Economista. Nos. 558, 569, 571—4, 580—6 of vol. xvi, 1885.

Giornale della Societa Italiana d'Igiene. An II°, Nos. 1 e 2.

Rivista Europea, Rivista Internazionale. (N.S.) Vols. i—iii (Jan. to Sept., 1877), Vol. xxiii (1881), *et seq.*

Mexico. Boletin de la Sociedad de Geografia y Estadistica de la Republica Mexicana.

Primera Epoca.—Tomo III.—(1854).
,, IV.—No 1 (1855).
,, V.—Nos. 1, 2 (1856).
Segunda Epoca. ,, I.—(1869).
Tercera Epoca. ,, VI.—Nos. 4, *et seq.* (1882).

Netherlands. Staatkundig en Staathuishoudkundig Jaarboekje voor 1849. (First year.) Statistiek in Nederland.

Portugal. Boletim da Sociedade de Geographia de Lisboa:—
1e Serie, Nos. 1, 2, 5, *et seq.* 2e Serie, the numbers for 1882.

Russia—

Annuaire des Finances Russes. 1e et 2e années.

Russian Geographical Society, Proceedings of the—. Report for 1877, and Literature of Anthropology, Ethnography, and Science from the earliest times to 1876. By V. Koper. Sheets 3 and 4 of vol. xiv, 1878, and Report for 1878, Part 5 of vol. xv, 1879.

Switzerland—

Journal de Statistique Suisse, for the first six years, 1865-70, and Part 2 of 1872.

Statistique de la Suisse. 1, 2, 6—9, 11—20, 25—28, 31, 32, 34, 36, 38, 40, 49, 59 *et seq.* (1860—).

United States—

Eighth Census, 1860. Compendium. 8vo. (1862.)

Smithsonian Institution. Annual Reports of the Regents. The first three, and for the year 1858.

Academy of Natural Sciences of Philadelphia. Proceedings of the—. Series 3. Part 1, 1871. Also the whole of the first and second series.

American Almanack, Boston, U.S.A. The volumes previous to 1831, and subsequent to 1861; also volumes for 1847 and 1850.

American Education Society's Quarterly Register, &c. Vols. i and iii.

American Geographical and Statistical Society (altered in 1871 to the *American Geographical Society of New York*)—

— Bulletins. Vol. i, Parts 2—4, *et seq.*; and vol. ii, *et seq.* 8vo. (*Circa* 1853.)

— Reports, previous to 1857, and for 1858 *et seq.* 8vo.

— Journals. Vol. i, No. 4, *et seq* Sm. 4to. (1859.)

— Proceedings. Vol. i, and Nos. 2 and 5, *et seq.*, of vol. ii (1863.)

— Journal. Vols. i and iii. 8vo. (*Circa* 1869.)

American Journal of Science and Arts. Vol. i—xxxv; vol. xxxvi, No. 2 (1839); vol. xxxix, No. 1 (1840); vol. xl, No. 2 (1841); vol. xli, No. 1 (1841).

American Philosophical Society—

Transactions of the—. Vols. i—ix; vol. xii, Part 1; vol. xiv, Parts 1 and 2; vol. xvi, Part 2, *et seq.*

Proceedings of the—. 8vo. Vols. i—ix; vol. x (pp. 1—296); vol. xii, No. 88.

American Social Science Association—

Journal, containing the Transactions of the—. Nos. 1 and 4.

Charities. Reports of the Proceedings of the Conferences of—. 1st, 3rd, and 5th.

Bankers' Magazine. New York. The first twenty volumes, comprising the second and third series. Series 3, vol. ii, No. 7 (1868); vol. v, No. 2 (1870); vol. vii, Nos. 5 and 7 (1872), and vol. viii, No. 6 (1873).

Franklin Institute. Journal of the—, First series. The whole. 2nd series, vols. i—xxiv; Third series, vols. lxxv—cxx. No. 6.

Prison Discipline Society. 8vo. Boston. Annual Reports. Nos. 1—23; No. 26 (1851); No. 28, *et seq.*

Illinois. First Biennial Report of the Bureau of Labor Statistics (1880).

Minnesota. Old series. First and Second Annual Reports of the Commissioner of Statistics for 1859 and 1860.

— New series. The First Thirteen Annual Reports of the Commissioner of Statistics for 1869-81.

New Jersey. Annual Reports of the Board of Health, 1877-80.

United States—*Contd.*

WISCONSIN. The History of, in three parts—Historical, Documentary, and Descriptive. Compiled by direction of the Legislature of the State. By William R. Smith. Part 1, vols. ii *et seq.*; Part 2, vols. i, ii, iv, *et seq.*; Part 3, vols. i *et seq.* 8vo.

(b) **India, Colonial, and other Possessions.**

Cape of Good Hope. Port Elizabeth. First sixteen Annual Reports of the Chamber of Commerce of—. 1864-80.

Ceylon Branch of the Royal Asiatic Society. First series, Nos. 4, 6, *et seq.* New series, Part III, *et seq.*

India—

A Manual of the Land Revenue Systems and Land Tenures of British India. By B. H Baden-Powell, of the Bengal Civil Service.

Maritime Trade of—. 1878-79, and previous years.

BENGAL. Half-yearly Reports of the Bengal Chamber of Commerce for 1855, November; 1858, November; 1859, May and November; 1860, May (or April); 1863-64, October to April; 1871, April to November, *et seq.*

Census of Berar, 1867, and Census of Coorg, 1871.

CALCUTTA. Report of Committee upon the Fever Hospital and Municipal Improvements. (*Circa* 1838.)

PUNJAB. Selections from the Records of the Government of the—. New series. Nos. 3—8, No. 10, *et seq.*

Asiatic Society of Bengal—

Asiatic Researches. Vols. x—xx.

Gleanings in Science. Vols. i—iii.

Journal. Vols. i—xvi.

Mauritius—

Almanac and Colonial Register, Nos. 1—4.

Census of Mauritius and its Dependencies. 1871.

New Zealand Institute. Transactions, &c. Vols. ii and iii.

South Australian Institute. Annual reports of—, previous to 1874-75.

Tasmania—

Royal Society of Tasmania. Reports previous to 1847, and for 1848, 1866-74, and 1879.

— Papers and Proceedings previous to 1848, for 1849, and for 1856-66, 1873, and 1879.

Victoria—

Report of the Chief Inspector of Mines, 1880.

Royal Society of Victoria. Transactions and Proceedings of the—. Vols. i—iv, and part 1 of vol. ix.

(c) United Kingdom and its Several Divisions.

United Kingdom—

Local Taxation Returns (England) for 1879-80.

Inland Revenue. Report of the Commissioners of—. No. 20.

List of Parliamentary Papers for the year 1873. 8vo.

Mineral Statistics of the United Kingdom of Great Britain and Ireland, for the years 1875-77.

Return showing Population of Counties and Divisions, and of Parliamentary Cities and Boroughs in England and Wales in 1821, 1831, and 1861 . . . Number of Electors in 1832 and 1862 . . . 1866 (259).

Record Commission Publications. Acts of the Parliaments of Scotland. Vol. i, 1124-1424. Fol.

Report of the Commissioners appointed to inquire into the means of obtaining Supplies of Wholesome *Water* for the Metropolis and other large Towns; with Minutes of Evidence, appendix, maps, plans, and index. 1868-69 [4169, 4169–I–II].

Report of the Sanitary Commission. 1868-69 [4218].

Reports from Her Majesty's Diplomatic and Consular Agents abroad, respecting the Condition of the Industrial Classes in foreign Countries and the purchase-power of Money. 1870 [C–68], 1871 [C–414], 1872 [C–635].

Indian Famine Commission—

Report of Commission, Part 3, Famine Histories (3086), 1881.

Appendices III and IV (3086 III and IV), 1881.

House of Lords. General Index to Sessional Papers of the— for 1801-59 and 1859-70.

House of Commons—

A Catalogue of Reports, 1696-1834, continued to 1837.

General Index to the Journals of the—, to vols. lvi to lxxv, 1801-20; lxxvi to xcii, 1820-37; xciii to cvii, 1837-52, and cviii to cxx, 1852-65.

England and Wales—

Metropolitan Police. Criminal Returns for 1836.

Registrar-General for England—

Annual Summaries of Weekly Returns, for vols. xi—xv (1850-54).

Tables of Mortality, No. 41 of 1841.

Weekly Returns of Births and Deaths in London and in twenty-seven other great Towns, Nos. 43—51 (1879).

Reports on the Sanitary Condition of the Residences of the Labouring Classes. Nos. 5 and 13.

Report of the Committee appointed to consider the Cubic Space of Metropolitan Workhouses, with Papers submitted to the Committee. [3786.] 1867.

Ireland. Registrar-General for Ireland. Weekly Returns of Births and Deaths in Dublin and in fifteen of the principal Urban Sanitary Districts in Ireland. Vols. i—viii (1864-71); vol. ix, Nos. 34 and 48 (1872); vol. xi, No. 32, and the second quarterly summary (1874); vol. xviii, the third quarterly summary (1881).

Scotland—

Agricultural Surveys of—, by the Board of Agriculture. The vols. for Kirkcudbright and Lanark. (*Circa* 1795-1816.)

Registrar-General for Scotland. Weekly Returns of Births, Deaths, and Marriages in eight principal Towns, for 1876, Nos. 1—15, 20, 21, 24, 25, and 29; for 1877, Nos. 13 and 31; for 1881, No. 37.

(d) Authors, &c.

Achenwall (Gottfried). Abriss der Staatswissenschaft der Europaïschen Reiche Statistik als Wissenschaft, 1808.

Ancillon (Frédéric). Du Juste-Milieu, ou du rapprochement des extrêmes dans les opinions: traduit de l'allemand. Vol. i. 12mo. Brux., *cir.* 1837.

Bagehot's "The English Constitution," and "Essays on Parliamentary Reform."

Bald (Wm.). Map of the Maritime County of Mayo (Part 3).

Behm und Wagner. Die Bevölkerung der Erde. Vol. i.

Bernard (Aug.). De l'Origine et des Débuts de l'Imprimerie en Europe. 1ère Partie. 8vo. Paris.

Black's Treatise, Theoretical and Practical, of Statistics.

Block (Maurice). Annuaire de l'Administration française faisant suite au Dictionnaire de l'Administration française. 1862, *et seq.* 12mo.

Butte. Statistik als Wissenschaft (1808).

Cauwés (Paul). Précis du Cours de l'Économie politique. Vol. ii *et seq.* 8vo. 1879.

Coke (C. A.). Statistical Summary of England and Wales (1865).

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